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ABSTRACT

The New Opportunities for Work Exemplary Career Education Program (N.O.W.) guide is comprised of 25 world of work learning packages for grades K-6, two units on career education in art for grades K-6 and K-3, 14 minicourses designed for leisure time activities, and 19 learning packages on careers for grades 7-9. It concludes with a discussion of evaluation procedures and studies used in the program. Generally, each learning package consists of an outline of objectives, learning activities, and materials and resources needed. In some cases additional information is provided as to subject matter, occupational information, motivation activities, study activities, evaluation procedures, and scope and sequence. The final section on evaluation discusses techniques and procedures for pre- and posttesting and, in addition, provides reports on evaluative studies on learning packages for grades 1-6. The appendix contains a K-16 career education scope and sequence paradigm. (BP)

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CAREER EDUCATION
ACTIVITY GUIDE

Project No. 1-361-0161

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NEW OPPORTUNITIES FOR WORK

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

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ACKNOWLEDGEMENTS

For the most part, these activities have been developed and implemented by teachers in the Lewiston School Department. The N.O.W. Program extends a hearty thanks to them for their cooperation, knowledge, and ideas. Their contributions have made career education available to many other educators.

We regret we cannot include every teacher's contribution to career education in Lewiston. The NOW Program thanks all teachers who used career education in their classrooms. We hope that this guide will be helpful in continuing these activities.

A special thanks goes to the NOW Staff members who also made this guide possible:

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I

INTRODUCTION

Career education is a decision making process. Within this framework, we can provide our students with the necessary means and opportunities to make decisions in the classroom, to begin with, so that they may become more self-directive individuals.

What means? What kinds of opportunities? The means is information and experience about different occupations and related school subject matter. The catalyst in the decision making process comes when students participate in classroom activities that enable them to relate themselves to the information and experiences in the activities.

To find satisfaction and accomplishment in one's work role is a most important tenet of career education. Indeed, we cannot easily find this satisfaction and accomplishment, if we have never had the right information and the necessary opportunities to make appropriate decisions about work in relation to ourselves. Most of us must work at least a third of our lives, so why not make this experience as rewarding and satisfying as possible?

The accompanying career education learning packages illustrate some methods used by Lewiston teachers in implementing career education in their classroooms.

Please feel free to add your own note pages. The guide is a career education resource. It is a way to get closer to the innovations of many other teachers.

Karen McMahon
Activities Writer
NOW Exemplary Program

II

OVERALL OBJECTIVES

The career education learning packages in this guide are sequenced and designed to aid the teacher in meeting the following objectives:

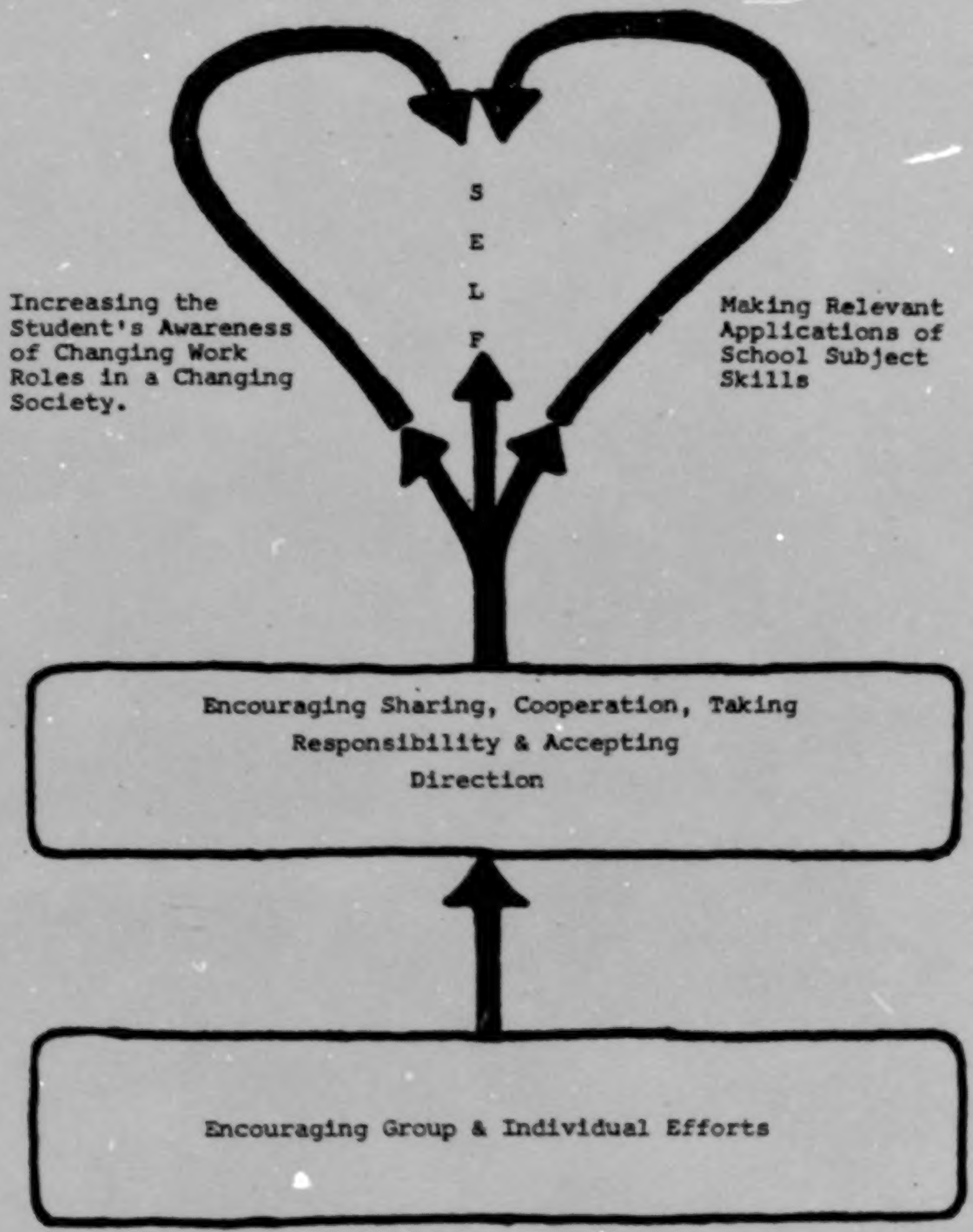
1. To encourage group and individual activity.
2. To encourage sharing, cooperation, taking responsibility, and accepting direction.
3. To encourage the student to experience cause and effect relationships in decision making.
4. To increase the students awareness of, exploration of, and preparedness for changing work roles in a changing society.
5. To make relevant applications of school subject skills.
6. To reinforce good self-concepts.

There are a number of ways to direct and organize activities to meet the above objectives. The paradigm on the following page illustrates the general relationship of these objectives to classroom activity.

III

CLASSROOM ACTIVITY

Encouraging The Student to
Experience Cause & Effect
Relationships in Decision Making


S E L F
Increasing the Student's Awareness of Changing Work Roles in a Changing Society.
Making Relevant Applications of School Subject Skills
Encouraging Sharing, Cooperation, Taking Responsibility & Accepting Direction
Encouraging Group & Individual Efforts

Part I

My Home-Mom
Dad
Sisters
Brothers
Me

Suggested grade levels for this unit:

Kindergarten and First Grade

Developed by the N.O.W. Staff

UNIT INTRODUCTION

This unit is designed to bridge the gap between home and school for the beginning student. Dealing with the student's familiar environment and gradually extending his awareness by means of exploration into other community areas may eventually lead to a better understanding of self in relation to society at large.

In this unit you and your students will have an opportunity to explore the family. Through the process of selecting appropriate unit activities for your classroom individuals, you may answer:

Who am I?
Who are the members of my family?
What do they do at home?
How do we work together?
What jobs do my family members have outside of home?

This unit covers approximately one third of the kindergarten-first grade Career Education model. The N.O.W. Program suggests units on school roles and workers and community helpers follow the implementation of this unit. Please feel free to select and order the activities in any combination from these units you see fit. If the activities are not appropriate for your classroom individuals, please do not hesitate to change and adapt them. I am interested in and open to your ideas for the further improvement of these units and for the development of new units.

Karen McMahon
Activities Writer
N.O.W. Program

Special Note: In implementing the activities in this unit, you should take particular precautions not to evoke embarrassing, too revealing, or discriminating answers to questions in the group experiences. Detailed information about the personal lives of family members, and discriminating descriptions about personal appearances can easily be avoided by carefully planning the questions you ask your students. For example you might not say: "Tell me about Mary's clothing..." or "How is Mary dressed today?" It might be better to say: "What articles of clothing is Mary wearing today?" "What colors does she have on?" Specify your questions.

I. Objectives and Concepts

A. Concepts

1. The study of the family unit most involves the kindergarten and first grade student because he is most familiar with this environment.

2. The initial study of self and the family unit paves the way to broaden the student's knowledge and experience of society at large.

3. The family's duties, skills, tools, and occupational positions provides a career education base from which to build additional occupational areas.

4. The study of occupations can bring a greater awareness of self in relation to society at large.

5. Occupational awareness is a basis for making appropriate career decisions in the student's future.

B. General objectives

1. To broaden the student's knowledge of the work community.

2. To stimulate the student's awareness of family work roles and relationships.

3. To give the student additional opportunities to identify relationships in terms of self.

4. To enable the student to work in a group as well as on his own initiative.

5. To broaden the base of student experience.

6. To experience cause and effect relationships in making decisions.

7. To provide the student with additional opportunities to share, cooperate, accept responsibility, and take direction in the form of classroom activities.

C. Learner objectives - You may need to change these objectives to meet the needs of your classroom individuals.

1. By the end of the unit study, the student will be able to describe three (3) everyday activities of each family member including himself.

2. The learner will be able to name at least five (5) tools his mother and father use in their everyday activities.

3. The learner will be able to name at least two tools additional family members (including himself) use in their everyday activity.

4. The learner will be able to name the occupational positions that members of his family hold.

5. The learner will be able to name a tool for each of these occupational positions.

6. The learner will be able to describe five (5) physical characteristics of himself.

7. The learner will be able to name five (5) similarities that he and his classmates have.

II. Subject Matter

A. Definition of terms*

1. Family - a group of individuals living and functioning together. Usually the family consists of two adults and their children.

2. Duty - action required by one's position or occupation.

3. Tool - an instrument used or worked by hand.

4. Skill - a developed aptitude or ability.

*Webster's Seventh New Collegiate Dictionary, G.&C. Merriam Co., Springfield, Ma., 1971.

B. Vocabulary terms

Non-readers would not benefit from vocabulary terms as such. In this case, you may want to display pictures and posters depicting family members and associated skills and tools for recognition purposes.

III. Occupational Information

A. Careers at home

1. Home roles for family members.

2. Job roles for family members.

B. Job facts

Information students will find out for each worker and family member. Learner objectives provide specifications for job facts. Refer to the NOW Program's Resource List for general and specific occupational information.

IV. Motivational Activities - "Who am I?"

A. Physical attributes of self

1. HAVE EACH STUDENT DRAW A PICTURE OF HIMSELF OR OF A CLASSMATE. If possible, the students can print the name on the picture. The student can show his picture to the class and point to and describe the individual drawn:

   a. Hair color

   b. Eye color

   c. Body build (small, big, tall, short, etc.)

   d. Clothing (dress, shirt, skirt, pants, shoes colors, etc.)

   e. Outstanding personal characteristics (dimples, freckles, etc.)

2. A DISCUSSION ON HOW WE ARE ALL DIFFERENT COULD PROCEDE. Play "Hot Potato."

   a. Students and teacher stand in a circle.

   b. Teacher throws a ball to a student.

   c. The student describes how he is different from the teacher:

      1.) Eye color

      2.) Hair color

      3.) Size

      4.) Age

      5.) Clothing

d. The student who caught the ball tosses or passes it on, and the next student describes the differences between the thrower and himself. Refer to A. 2.c. 1.)-5.) on page 3.

3. DISCUSS PHYSICAL SIMILARITIES.

a. The teacher could ask all the students in the circle to draw closely together and sit in a circle on the floor, and hold hands.

b. The teacher may follow-up by saying:

1.) we have been talking together about how we are all different.

2.) But, we're all alike, too.

3.) There are things we all have in common.

4. Play Sesame Street song: "I've Got Two Eyes, 1-2."

5.) Have children learn to sing the song while pointing to parts of their body as they sing.

4. Refer to Unit A, "Physical Attributes of Self", Focus on Self-Development, Stage One: Awareness, SRA Kit for additional activities.

B. The intellectual self - "What have I learned?" - "What am I learning?" - "What will I learn?"

1. DO ACTIVITIES TO SHOW WHAT THE STUDENTS HAVE LEARNED.

a. Display pictures of students doing the following activities:

1.) Dressing

2.) Washing

3.) Brushing

4.) Combing hair

b. Make individual experience charts for the above activities. Keep a daily tally of the students' personal care habits.

c. Have students break into groups for a story telling hour. Examples:

   1.) I went to the store, and ____________.

   2.) I visited ____________.

   3.) I played with ____________.

   4.) My favorite toy is ____________.

   5.) I like to eat ____________ most, because..., etc.

d. Play games requiring jumping, skipping, and running.

   1.) "Simon Says"

   2.) Relay games using these activities

e. Discuss how we can feel happy or sad. Make a happy face and a frowning face on two separate paper plates or paper circles. Attach them back to back to a pencil or dowel. Read the following statements. Have the students show the face that shows how they feel.

   1.) How do you feel when someone says you are not nice?

   2.) How do you feel when someone scolds you?

   3.) How do you feel when someone smiles at you?

   4.) How do you feel when someone says he likes you?

   5.) How do you feel when you tell your mother you love her?

   6.) How do you feel when you tell someone you hate them?

   7.) How do you feel when you are angry?

   8.) How do you feel when you get up in the morning?

*DUSO KIT - Supplemental Activities 11-B.

9.) How do you feel when you are going to a party?

10.) How do you feel when your friend spills lemonade on you?

11.) How do you feel when you win a game?

12.) How do you feel when someone else wins a game?

13.) How do you feel when someone says: "I don't like you anymore."

14.) How do you feel when someone says you did good work?

15.) How do you feel when someone admires your dress or shirt?

16.) How do you feel when you have a new toy?

17.) How do you feel when your new toy gets broken?

f. Ask the students what else they have learned. Construct individual experience charts for these additional activities. (swim, skate, ride a bike, etc.)

2. USE ORDINARY CLASSROOM ACTIVITIES TO SHOW WHAT THE STUDENTS ARE LEARNING. Follow-up with SRA Activities, Stage One: Awareness, "The Intellectual Self."

a. I am learning colors.

b. I am learning numbers.

c. I am learning to print.

d. I am learning to read.

e. I am learning to make new friends.

1.) Make a chart for the class. Make room for each student to have the following entry:

a.) My real name is ____________.

b.) Call me ____________.

2.) Divide students into groups. (The original activity groups from "Who am I?" would be a good idea.)

3.) Have acquaintance exercises.

   a.) Students introduce each other by their "Call me--------" names.

   b.) Group procedes to do friends together exercises.

4.) Refer to Now I'm Ready, "Dimensions of Personality," by Carl Fischer and Dan Johnson (NOW Resource List) for additional friends together exercises. (Unit II. "Making Friends")

3. READ THE FOLLOWING STORY TO YOUR STUDENTS TO ILLUSTRATE WHAT THEY WILL LEARN.

A Trip to the Store

This is a story about a brother and sister named Randy and Cloe. Randy was nine, and Cloe was five. Most of the time Randy and Cloe didn't even notice that they were different ages. They played together and lived together. They were not only brother and sister, but they were friends.

Randy and Cloe's mom and dad, Mr. and Mrs. Hill, were always so glad to see Randy and Cloe playing in the sandbox together or playing on the swing set after school.

But one day Randy come home from school and asked his mother: "Can I go to the store after school tomorrow to buy an ice cream cone with my classmates?"

Mrs. Hill thought that Randy was old enough and knew enough to walk the long distance to the store, even though he had to cross a busy street. When Mrs. Hill told Mr. Hill that evening that she gave Randy permission to go to the store, Mr. Hill said: "But Cloe will be so disappointed when Randy isn't home from school to play with her."

Then he said to his wife: "You're right, though, Randy is old enough and, he does know enough. Cloe is still too young to go to the store after school with her classmates, but what will we say to her?"

Cloe just then walked into the room. She looked very sad. Tears were running from her eyes.

"Randy says he's going to the store," she sniffled. "Why can't I go, too?"

"Randy is going with friends from class, Cloe," said Mrs. Hill.

"Yes, but I'm his friend, too!" Cloe said sadly.

"Yes, you are, but tell me Cloe, how old are you?" Mr. Hill asked.

"Five."

"How old is Randy?" asked Mrs. Hill.

"Nine...almost ten!"

"When you are Randy's age, Cloe, you may go to the store with your classmates," said Mr. Hill understandingly.

"Yes," said Cloe's mother, "and tomorrow afternoon while Randy is at the store, we will bake some cookies."

b. Ask your students these follow-up questions:

1.) What did Cloe do next?

2.) What kind of cookies do you think Cloe and her mother made? What kind would you like?

3.) Was Cloe happy or sad at the end of the story? Why?

4.) Why couldn't Cloe go to the store?

5.) Did Cloe learn anything new from this?

6.) What did she learn?

7.) Are there things that you can't do that your older brothers or sisters can do? What are they?

8.) What do you what to learn most that you can't do now? (ride a bike, go to the store, take care of yourself when your parents are gone, ice skate ..., etc.?)

IV. Study Activities - The DUSO Kit, and SRA - Focus on Self, Stage One: Awareness will provide additional activities.

A. Initial activities - "Who are the members of my family?"

1. DIVIDE THE CLASS INTO "WHO AM I?" GROUPS. Have each member name the members of his family.

2. ASK THE STUDENTS TO DRAW THEIR FAMILY MEMBERS IN A GROUP AND LABEL THEM.

3. HAVE STUDENTS BRING IN PHOTOGRAPHS OF THEIR FAMILY MEMBERS.

4. MAKE A FAMILY TREE BULLETIN BOARD. Arrange pictures and photographs of the family members in appropriate places around the tree. You may want to draw a family tree for each "Who am I?" group or make a small one for each individual student. If provided a form, the student may complete the tree himself, or complete it in his group.

B. Research activities "What does my family do at home?"
"How do we work together?"

1. BREAK INTO GROUPS, AND ASK INDIVIDUALS IN THE GROUP THE FOLLOWING QUESTIONS:

a. What does your mother do at home?*

b. What does your father do at home?

*Allow the students to make their own suggestions before directing them to duties that adhere to traditional roles. The changing attitudes in male-female home roles may indicate that traditional role descriptions are no longer appropriate for that family member. The father may very likely do some cleaning and cooking. The mother may very likely do some fixing and painting. The parents may also cooperate and do these activities because sharing duties is very important aspect of the family unit.

c. What do my brothers and sisters do at home?

1.) Help my mother and father around the house.

2.) They play with me and help take care of me.

3.) They study for school.

        4.) They have hobbies of their own. (Ask them to name these hobbies.)

        5.) Ask them to name some tools for each 1.) and 4.).

    d. What do you do at home?

        1.) I help my mother and father. (What do you help them with? What tools do you use?)

        2.) I play with my brother and sister. (What do you play?)

        3.) I play with my friends and with myself. (Who do you play with? What do you play?)

    e. What things do you all do together?

        1.) We do some chores together. (What chores do you do together?)

        2.) We eat together.

        3.) We go places together. (Where?)

            a.) Church

            b.) Picnics, etc.

2. HAVE EACH STUDENT BRING IN A FEW TOOLS HIS FAMILY MEMBERS USE IN THEIR HOUSEHOLD ACTIVITIES. (You must be careful, and try to make suggestions for tools that are not potentially dangerous.)

    a. Egg beater

    b. Spoon

    c. Measuring cup

    d. Pencil, paper

    e. Hammer

    f. Wrench

3. ALLOW EACH STUDENT TO ASSUME A FAMILY ROLE AND SET UP A PLAY HOUSE. (You might have better control if you allow each group to assume family roles rather than having the whole class participate in this activity at once. Incorporate the tools brought in by the students into the playhouse setting.

    a. Emphasize individual duties and the tool(s) each duty requires.

    b. Emphasize activities that require group cooperation.

C. Correlating Activities - Subject Matter tie-ins

1. LANGUAGE ARTS

   a. Have each student in the group describe the use of the tool(s) he brought in.

   b. Show each student how to print and recognize the name of five tools his mother and father use.

2. MATH

   a. Have each student name and count the members of his family.

   b. Have each student go home and count as many tools as he can that his family uses.

3. SOCIAL STUDIES

   a. Have each student give his address.

   b. Plot each student's address on a generalized city map with a star and his name beside the star. Give each "Who am I?" group a different colored star. Group 1 members get red stars, and group 2 members get blue stars, etc.

   c. Put a large star at the location of the school.

   d. Point out distance relationships between friends' homes (particularly individuals in the "Who am I?" groups).

   e. Ask individuals to point out where their school is, where they live, and where their friends live.

4. SCIENCE

   a. Ask students to bring in samples of their favorite cookie recipe.

      1.) What are they made of?

      2.) What tools were used to make these cookies?

   b. Ask students to bring in samples of living things around their homes. Conduct a group discussion and a show and tell about these things.

1.) Plant life.

2.) Pets and other living things (insects, etc.).

5. SPECIAL SUBJECT AREAS

Art - You may substitute bringing in articles in these activities by drawing these articles.

D. Culminating activities

1. HAVE EACH STUDENT ASK THEIR FAMILY MEMBERS' OCCUPATIONS AND ACTIVITIES THEY DO OUTSIDE OF HOME.

2. HAVE STUDENTS BRING IN A TOOL OR MATERIAL FOR EACH OF THESE OCCUPATIONS.

3. HAVE EACH STUDENT EXPLAIN AND SHOW THE USE AND OCCUPATION REPRESENTED BY THE TOOLS AND MATERIALS.

4. HAVE STUDENTS DRAW PICTURES OF THEIR FAMILY MEMBERS PERFORMING THESE ACTIVITIES AND OCCUPATIONS.

5. HAVE EACH STUDENT IN A GROUP GIVE AN ACCOUNT OF WHAT HIS FAMILY MEMBERS DO. (Use tools and materials for illustration.) Afterward, put all materials and tools in the center of the group. Have each student (blindfolded) choose a tool or materials. Have each student tell what the tool or material is by feeling it only. Have each student describe the use and related occupation of their tool. (Also, have them tell who brought in the tool, if you desire.)

E. Follow-up Activities

1. DISCUSS THE FAMILY TREE BULLETIN BOARDS.

2. ADD PICTURES AND LISTS OF DUTIES AND TOOLS, AND OCCUPATIONS TO APPROPRIATE FAMILY MEMBERS.

3. ASK A WILLING PARENT TO COME INTO THE CLASS AND TALK ABOUT THE PARENT'S FAMILY. Another teacher who has a family may be most convenient.

4. ALLOW EACH "Who AM I?" GROUP TO PARTICIPATE IN A TYPICAL DAY AT HOME. Include at home and away from home activities.

C. My Home, student checklist

Student's name_____________________________

	poor	fair	good	excellent
1. The student worked individually.	1	2	3	4
a. The student took direction and accepted responsibiligy.	1	2	3	4
b. The student experienced cause and effect relationships in making decisions.	1	2	3	4
2. The student worked in a group.	1	2	3	4
a. The student shared.	1	2	3	4
b. The student cooperated.	1	2	3	4
3. The student met learner objectives 1.-7.	1	2	3	4
4. Changes in student attitudes	1	2	3	4
5. Changes in the student's level about his home in relation to self were:	1	2	3	4

6. Comments:

Materials and Resources

A. Materials available through the NOW Program

   1. SRA KIT: Focus on Self-Development Stage One: Awareness

   2. DUSO KIT, Level 1

   3. Now I'M Ready, Fischer and Johnson (book)

B. The NOW Program has a variety of audio-visual equipment available to you given reasonable notice.

My School

Part II

This unit is suggested for use in
Kindergarten and First Grade

Developed by:

The N.O.W. Staff

UNIT INTRODUCTION

School is a new and curious place for kindergarten and first graders. For kindergarten students, the first days at school are a totally new experience. Perhaps the student has never been away from home or relatives. He is in the hands of unfamiliar people, and school surroundings are quite different from the comfort of his home environment. It is not his home he sees, but he sees a large official-looking building. It is not a small group of individuals he must deal with, but in his classroom, it probably amounts to twenty to thirty individuals.

Although the first grader has had the opportunity to form some firsthand impressions about school, he is facing an exciting and challenging first year. This is the first year he will attend school for a full day. The first year student also faces an educational challenge: the student will begin to acquire new reading, writing, and math skills.

Let's make the beginning student's introduction to school friendly and unconfusing. Let's show him that school can be fun, and that the people in his school are there to help him. Let's expand his narrow base of occupational awareness by giving him the opportunity to explore these questions:

What do the people at my school do?
What tools do they use?
How do the people at my school help me?

The activities in this unit may help your students explore these areas. Select and adapt the activities to the needs of the individuals in your classroom. Your additional ideas and adaptations can only benefit the development of this unit as a valuable resource to teachers across the country who have become enlightened to the concepts of Career Education. Please do not hesitate to contact me as to your success, problems, and adaptations in implementing activities in this unit.

Karen McMahon
Activities Writer
N.O.W. Program
(784-1672)

I. Objectives and Concepts

A. Concepts

1. Familiarity with the school environment is the next step from familiarity with the home environment to eventual increased awareness of society at large.

2. A knowledge of workers at home, and workers at school leads to a knowledge of workers and occupations at large.

3. Occupational awareness is a basis for making appropriate career decisions in the student's future.

B. General objectives

1. To increase the student's awareness of work roles.

2. To enable the student to become more familiar with the school environment and its purposes in terms of self.

3. To encourage group and individual efforts.

4. To acquaint the student with the work roles in the school.

5. To encourage sharing, cooperation, taking responsibility, and accepting direction.

6. To encourage the student to experience cause and effect relationships in decision-making.

7. To acquaint the student with the various tools and their use in the school environment.

C. Learner objectives

1. By the end of the unit activity, the learner will be able to name three things his school does for him.

2. The learner will be able to name four (4) workers in school.

3. The learner will be able to name two tools for each of these four (4) workers.

4. The learner will be able to describe two duties for each of these four workers that utilize the above mentioned tools.

II. Subject Matter

A. Definition of terms

1. Tool-an instrument used or worked by hand.
2. Duty-action required by one's position or occupation.
3. Skill-a developed aptitude or ability.

*Webster's Seventh New Collegiate Dictionary, G.&C. Merriam Co., Springfield, Mass. 1971

B. Vocabulary

Non-readers would not benefit from vocabulary terms as such. In this case, you may want to display pictures and posters depicting school workers and associated skills and tools. For recognition purposes, print the name of the worker, tool, and duty on the poster for readers.

III. Occupational Information

A. Careers at school:

1. Teacher
2. Principal
3. Janitor
4. School secretary
5. School doctor
6. School nurse
7. Cafeteria worker
8. Dietician
9. Maintenance worker

B. Job facts - information students will find out for each worker studied. The Dictionary of Occupational Titles may help you in obtaining detailed information about the above jobs to help you answer student questions.

IV. Motivational Activities - Getting to know my school.

A. What's in my school?

1. SHOW PHOTOGRAPHS OF ITEMS OUTSIDE AND INSIDE THE SCHOOL. Divide the class into three or four groups. Do either outside or inside activities first. Give each group several pictures of these items or a picture to each or several students. Find the items that are similar to the items in the pictures. Have each group take the rest of the class on a tour to show them what they found.

2. ASK THE STUDENTS TO BRING IN SAMPLES OF THINGS THAT SCHOOLS ARE MADE OF FOR SHOW AND TELL: (You might ask the students to bring in some tools, too.)

    a. Brick

    b. Piece of cement

    c. Piece of wood

    d. Piece of metal

    e. Nail

    f. Paint

    g. An unsharp piece of glass

    h. Stone

    i. Tile

    j. A piece of plaster

    k. Screw

    l. Piping

    m. Wire

    n. Tar

    o. Chair

    p. Light bulb

    r. Light switch

    s. Countertop material

3. MAKE A DISPLAY OF THE ABOVE MATERIALS.

4. ASK THE STUDENTS TO DRAW PICTURES OF WORKERS BUILDING A SCHOOL. Display them. Talk to the students and answer questions about workers who build a school.

B. Who are the people in my school?

1. ARRANGE A FIELD TRIP FOR THE CLASS TO THE PRINCIPAL's OFFICE.

    a. Ask the principal to talk to the children about how he helps them at their school. (Ask him to talk about the tools he uses in his work.)

    b. Ask the school secretary to talk to the students about what she does. (Ask her to talk about the tools she uses in her work.)

2. ON THE FIELD TRIP EXPLAIN THE THINGS A SCHOOL SECRETARY AND THE PRINCIPAL DO TO HELP THE STUDENTS.

3. THE FOLLOWING ACTIVITY MAY SERVE AS A FIELD TRIP FOLLOW-UP:

    a. Bring students together in a group.

b. With the group ask what tools are used by the school secretary and principal.

c. With the group, draw pictures and procure articles that the school secretary and the principal use.

1.) Pen (s&p)

2.) Pencil (s&p)

3.) Pad of paper (s&p)

4.) Telephone (s&p)

5.) Typewriter (s)

6.) Eraser (s&p)

7.) Bell (s&p)

8.) Briefcase (p)

9.) A write-in calendar (s&p)

10.) Address book (s&p)

11.) Student register (s)

4. START A SECOND PART OF THE DISPLAY "WORKERS IN MY SCHOOL." Add materials and pictures pertaining to school workers to the display. Take pictures of school workers and display them.

V. Study Activities

A. Initial Activities

1. CONTINUE MOTIVATING ACTIVITIES AND USE THEM THROUGHOUT THE UNIT.

2. ASK A JANITOR OR ANOTHER SCHOOL WORKER TO COME INTO THE CLASSROOM. Talk about some of the things he does for the school and in turn for the students.

3. GO ON ANOTHER SCHOOL FIELD TRIP. Go to the:

a. Cafeteria

b. Boiler room

c. School nurse and doctor's headquarters

4. ASK THE WORKERS IN THESE PLACES TO DESCRIBE SOME OF THE DUTIES AND TOOLS USED ON THE JOB.

5. CONTRIBUTE INFORMATION AND TOOLS TO THE "MY SCHOOL" DISPLAY.

B. Research Activities

1. UTILIZE YOUR DISPLAY AS A CLASSROOM ACTIVITY. For example, ask individuals:

    a. (student's name), bring me something from the "My School" display that the school secretary uses. It is black. It has numbers. It is about this big. (Teacher illustrates with hands.) It has an electric cord on it.

    b. (student's name), bring me something this school is made of. It is this big. It is made of steel. It has a head on it. (student's name),bring me the tool that is used on this material.

2. CREATE SITUATION WHERE THE STUDENTS CAN USE THE TOOLS AND MATERIALS IN THE DISPLAY.

    a. If you were a builder, (student's name), what would you do with these things? (Hand the student a piece of wood, hammer, and nails, for example. Manually help the student, if necessary.) Continue this activity until school building materials are implemented and everybody has had a turn.

    b. If you were a school secretary, (student's name), what would you do with these things, if you were talking to a parent whose child was sick? (student's name), Why don't you be the parent? Pretend you are your mother or father.) Hand the "school secretary" the play phone, paper, and pencil. Do not be afraid to manually assist and verbally prompt the participants. Continue this exercise until all your school workers and display tools have been used. If you have a large class, repeat the exercises more than once. The flexibility of this activity should allow the students to display their individuality and interests.

C. Correlating activities

1. LANGUAGE ARTS

    a. Assemble the students into groups.

    b. Have each student tell a short story.

1.) What I saw my first day of school.

2.) My teacher. (principal, school secretary, janitor, etc.)

3.) Tools I use in school.

4.) My first day at school was happy. (scary, sad, etc.)

c. Make up a "Who am I Story" for comprehension purposes.

1.) Describe some physical characteristics of a school worker in the first person. ("I am quite tall...")

2.) Describe some duties of that worker.

3.) Describe some of the worker's tools.

4.) Ask: "Who am I?"

5.) Ask:"Why?"(comprehension)

6.) What does this worker look like?

7.) What does this worker do?

8.) What are some of this worker's tools?

2. MATH

a. Ask students to measure various areas by footsteps.

1.) How many footsteps is it around this room?

2.) How many footsteps long is the hallway?

3.) How many footsteps is it around the school?

4.) How many footsteps is it around the playground?

5.) How many footsteps is it to the principal's office?

6.) How many footsteps is it to the nurse's office?

7.) How many footsteps is it to the boiler room?

3. SOCIAL STUDIES

   a. Ask students to go home and ask their parents or an older friend about their first day in school.

      1.) What happened?

      2.) What did you see that was new?

   b. Ask the students to relate their findings in class.

      1.) Orally

      2.) Art work

4. SCIENCE - Ask the students to go for a natural resources hunt on the school grounds.

   a. In winter, you could talk about snowflakes.

   b. In fall, students can bring in samples of leaves from around the school grounds.

   c. In spring, students can bring in samples of shrubbery, grass and plants around the school grounds.

D. Culminating Activities

   1. MAKE A CLASS EXPERIENCE CHART. List the student's names on one axis and school workers on the other.

   2. HAVE THE CLASS RUN A SCHOOL FOR A DAY. Assign duties of workers to each student. Have them perform these duties for rehearsal. Then allow the students to work together in a group to make their "play school." Direct this activity to emphasize school workers and student relationships. Take a portion of the students to make a model classroom with a student as the teacher. Assign principal, secretary, janitor, school nurse, sick student, and parent roles.

E. Follow-up activities

   1. DO EXERCISES INVOLVING TOOL, SKILL, AND OCCUPATION RECOGNITION. Use your vocabulary words, posters, and student pictures.

   2. MAKE A MATCHING EXERCISE WITH TOOLS ON ONE SIDE AND WORKERS ON THE OTHER.

3. ASK STUDENTS WHAT SCHOOL WORKERS THEY WOULD LIKE TO BE. Ask them why.

4. ASK EACH TO DRAW A PICTURE OF THEIR WORKER PERFORMING ONE DUTY.

5. ALLOW EACH TO ROLE PLAY THE DUTY WITH OTHER STUDENTS IN THE CLASS PERFORMING THEIR CHOSEN WORKER DUTIES.

6. ARRANGE TO HAVE THE ACTUAL WORKERS SHOW THE STUDENTS JOB DUTIES IN A SHADOW EXPERIENCE.

C. MY SCHOOL, student checklist

Student's Name:________________________________

		poor	fair	good	excellent
1.	The student worked individually.	1	2	3	4
	a. The student took directions and accepted responsibility.	1	2	3	4
	b. The student experienced cause and effect relationships in making decisions.	1	2	3	4
2.	The student worked in a group.	1	2	3	4
	a. The student shared.	1	2	3	4
	b. The student cooperated.	1	2	3	4
3.	The student met objectives 1.-4.	1	2	3	4
4.	Changes in student's attitudes were:	1	2	3	4
5.	Changes in the student's level of awareness about his school and its workers were:	1	2	3	4

6. Comments:

Materials and Resources

A. Materials available through the N.O.W. Program:

1. I Want to be a Secretary, book
2. I Want to be a Teacher, book
3. I Want to be a Bus Driver, book
4. I Want to be a Doctor, book
5. I Want to be a Nurse, book
6. DUSO Kit, Level 1

B. The N.O.W. Program has a variety of audio-visual equipment available to you given reasonable notice.

Community Helpers

Part III

This unit is suggested for
kindergarten and first grade

Developed by the N.O.W. Program Staff

A special thanks goes to the following elementary school teachers for developing and implementing new ideas for activities and resources:

Jeanine Scribner - Martel
Patricia Hussey - St. Mary's
Elizabeth Deschenes - Pettingill
Lorraine Fournier - McMahon

UNIT INTRODUCTION

This unit may be the kindergarten and first grader's introduction to community awareness. Previously the only hands-on experience the beginning student may have had is in his home and in his school. One of the primary objectives of this unit is to increase occupational awareness. You might feel that this is a relatively unimportant aspect of the student's total education at this grade level, but please remember, though, that occupational awareness does not mean that the student will make an actual career decision. At the kindergarten-first grade level, occupational awareness on the community level means that the student will begin to realize the structure of the community, i.e., the community is made up of workers. Workers help the community. To direct this larger concept to the individual student we can enable him to realize: "Workers in my community help me." This is in preparation of future concept exploration like: "How do I fit into my community?" and eventually, "What will be my role as a community worker (or helper)?"

The activities in this unit (and in the two preceding units) are designed to help you lay the necessary groundwork to bring your students to this level of awareness. Hands-on activities with tool and skill involvement and role playing activities may enable your students to improve motor-skill coordination, to utilize subject matter information in physical activity, and to experience real-life situations in the working world.

For the most part, the activities in this unit are untried in the classroom. Therefore, it is important for you to inform us of the suitability of the unit activities to your classroom individuals. Do not hesitate to adapt, delete, or add activities. We do not expect you to follow the unit letter by letter. This is a resource guide. Again, please do not hesitate to inform us of your innovations, because they will aid the development of this unit as a Career Education resource.

Karen McMahon
Activities Writer

I. Objectives and Concepts

A. Concepts

1. Familiarity with the community is the next step from familiarity with the home and school environment to eventual increased awareness of society at large.

2. A knowledge of workers at home, school, and in the community leads to a knowledge of workers and occupations at large.

3. Occupational awareness is a basis for making appropriate career decisions in the future.

B. General objectives

1. To increase the student's awareness of work roles.

2. To enable the student to become more aware of his community and its function in terms of self.

3. To encourage group and individual efforts.

4. To acquaint the student with community helper work roles.

5. To encourage sharing, cooperation, taking direction, and accepting responsibility in the form of classroom activity.

6. To encourage the student to experience cause and effect relationships in decision-making.

7. To acquaint the student with the various tools (and their uses) of community helpers.

C. 1. By the end of the unit activity, the learner will be able to name five community helpers.

2. The learner will be able to name two tools for each of these five workers.

3. The learner will be able to describe one duty for each of the five workers that utilize one of the two above mentioned tools.

4. The learner will be able to name five ways (one for each worker) that community helpers help.

II. Subject Matter

A. Definition of terms*

1. Tool - an instrument used or worked by hand.
2. Duty - action required by one's position or occupation.
3. Skill - a developed aptitude or ability.
4. Community helper - a worker who serves his community in his occupation. On the kindergarten-first grade levels we might consider a narrow category of the expansive field of community helpers. Refer to III. Occupational Information for a worker listing.

B. Vocabulary - Non-readers would not benefit from vocabulary terms as such. In this case, you may want to display pictures and posters depicting community helpers and associated skills and tools for recognition purposes. Print the name of the worker, tool, skill, or duty on the poster for readers.

III. Occupational Information

A. Community helpers

1. Policeman
2. Fireman
3. Mailman
4. Bus driver
5. City maintenance
6. Doctor
7. Grocer
8. Druggist
9. Dentist
10. Clergyman
11. Librarian

B. Job facts - Information students will find out for each worker studied. Learner objectives provide specifications for job facts. The Dictionary of Occupational Titles may help you in obtaining detailed information for the above jobs.

IV. Motivational Activities

A. PREPARE STUDENTS FOR A RESOURCE PERSON VISIT.

1. Provide background information on the community. (List some workers in the community.)

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*Webster's Seventh New Collegiate Dictionary, G. & C. Merriam Co., Springfield, MA , 1971.

a. Show posters and pictures of community helpers.

b. Ask questions concerning these pictures.

1.) Who is this?

2.) What is he doing?

3.) Have you ever seen any worker in the community do this?

4.) What other things could this worker do?

B. HAVE A COMMUNITY HELPER SPEAK TO THE CLASS.

1. Ask the speaker if he would talk about:

a. Some tools of his job

b. Some duties of his job

c. How he helps the community

d. How he might help the student

2. Refer to the N.O.W. Program's "Resource Person Guidelines" for additional background information you should have for the speaker.

C. TAKE A FIELD TRIP TO A COMMUNITY HELPER'S WORK LOCATION. Take your class to the resource person's work location.

1. Tell your students these things about the proposed field trip:

a. Where

b. Why

c. How

d. How long

e. Lunch and/or financial arrangements

2. Also, refer to the N.O.W. Program's "Field Trip Guidelines."

3. Refer to Correlating Activities for subject matter tie-ins for field trip preparation.

4. Field trip follow-up activities are in initial and study activities.

V. Study Activities

A. Initial Activities

1. BEGIN MOTIVATIONAL ACTIVITIES AND IMPLEMENT THEM THROUGHOUT THE UNIT.

2. START BULLETIN BOARD TO ACCOMPANY THE HOME AND SCHOOL BULLETIN BOARDS OF THE TWO PRECEDING UNITS.

a. Display the vocabulary resource pictures in a group.

b. Display additional student drawings of these workers involved in various job duties which include tool use.

c. Relate this display to the two previous displays of home and school.

1.) How do these community helpers help the members of your family? Relate this to individual family members (including the individual student).

2.) How do these family members help the workers and students who go to our school?

B. Research Activities

1. HAVE STUDENTS BRING IN VARIOUS ARTICLES AND TOOLS THAT A COMMUNITY HELPER MIGHT USE.

a. Policeman-badge, parts of a uniform, (shoes and shoe polish-other articles dealing with personal appearance since a clean and well-dressed image is important for community helper who is in the public eye.), model police car, model motorcycle.

b. Fireman - a piece of hose, nozzle, fireman's hat, toy fire engine, badge, galoshes, rain slicker, toy axe.

c. Mailman - a bag representing a mail bag, stamped envelopes, magazines, model mail truck, make a mailbox out of a box.

d. Bus driver - change carrier, make a hat out of paper, model bus, (If you wanted to make this a big project, the class could make a bus out of an old refrigerator carton.) make bus tickets, set up chairs in rows for a model bus.

e. City maintenance - rake, shovel, broom, paper picker-upper, plastic bags for refuse.

f. Doctor - play doctor's kit and bag.

g. Grocer - various cans of food, play vegetables and fruits, play cash register, play money, counter space (A table will do.), cash register, play money.

h. Druggist - empty bottles, jars and packages of health needs, cash register, play money.

i. Dentist - tooth bursh, tooth paste, dentist chair (A folding chair, play drill - construct it out of a box, some rope or tubing with a small blunt edged piece of rubber or plastic on the end to serve as a drill.)

j. Clergyman-cross, Bible.

k. Librarian - assorted classroom books, a display table, a few file cards to insert in the books. Students can print their name on the file card and leave it with the librarian.

2. ARRANGE THE ABOVE ARTICLES AROUND THE COMMUNITY WORKERS DISPLAY. Break the students up into a group for each worker. Have each group display these things for this worker.

3. PROCEED TO DO THE FOLLOWING EXERCISES WITH THE DISPLAY MATERIALS:

a. "(Student's name), please go to our community helpers display. Bring me something that a policeman uses that...(Describe the article, and ask the student to show and tell how the article is used.)."

b. Continue the process until each student has had the opportunity to contribute. Do not hesitate to help the student verbally or manually, becasue this is not a test but a familiarization exercise.

C. Correlating activities-subject matter tie-ins.

1. LANGUAGE ARTS

   a. Have students assemble into groups.

   b. Ask each student to tell an "I would like to be a (community helper) because..."

   c. Ask questions about tools and skills to all the students concerning the community helper.

   d. For readers and writers you might ask the student to learn how to print and recognize the name of the community helper.

2. MATH

   a. Have money counting exercises in dealing with the community helpers who use money exchange in their occupations. Example: Grocer-Utilize grocer display materials. Show how money exchange takes place in a store. Have the students act out the procedure with your guidance and prompting. You might even participate to set an example.

   b. If the above exercise is too advanced for some of your students, you could implement counting exercises with the different materials in the community helpers display. Example: "(Student's name), go to the Community Helper part of our display and count how many tools we have that this helper uses."

   c. Measuring exercises - Have them measure objects with a ruler or a piece of string. "How big around is the policeman's hat?" "How many feet long is our toy bus?", etc.

3. SOCIAL STUDIES

   a. Draw a generalized city map. Plot the location of the field trip. (Do this before you take the field trip.) Plot the location of the school. Plot several roads to the location.

   b. Plot other locations of some remaining city workers. accompany these locations with pictures of that worker.

   c. Have each student go to the map and find a worker's location. Then ask each to trace a route to take from the school to that location.

d. Hand out selected mimeo sheets showing several routes from a designated spot leading to a worker (include dead ends, etc.). Have the students plot the quickest and easiest route to the location of the worker.

4. SCIENCE

   a. Do a brief introduction to the student's community environment.

   b. Relate the community environment to the role of appropriate workers.

      1.) City maintenance worker - helps to keep the community environment cleaned and picked up. You might have students bring in samples or pictures of things that are found in a park. Relate how the city maintenance worker cares for these things.

      2.) Policeman - protects the city against vandalism. Ask the students what things they have seen in their community that relate to vandalism.

      3.) Fireman - protects our homes, fields and trees from fire. Give your students an introduction to fire.

      4.) Dentist, druggist, doctor - tell your students about first aid; have someone come in and give a demonstration; allow the students to demonstrate. Give your students a brief introduction to drug safety (Never take any pills or medicine or explore in the medicine cabinet. Explain what medicine is for, and when it should be taken.). Explain how a doctor protects our health. Give a brief lesson on dental care.

5. SPECIAL SUBJECT AREAS

   Art - Draw pictures for the display and construct models. If the students have spare time, you might ask them to draw pictures of the community helper they would like to be.

D. Culminating activities

1. MAKE A STUDENT EXPERIENCE CHART. List the student's names on one axis and community workers on the other. Put a special star for each student's chosen community worker on the chart. Fill-in other community workers

that the student has dealt with in his learning activities with checkmarks.

2. SET-UP A MODEL COMMUNITY WITH ALL MATERIALS FROM THE HOME, SCHOOL, AND COMMUNITY DISPLAYS. Have each student assign himself a role. Allow group interaction to take place between workers and roles. Before the activities start, ask each student to think for a moment about the duties, materials, and tools each worker or role requires. Ask them to think how they can ask other workers in the "community" to help. You might ask questions before the interaction like this:

    a. If you are the fireman, (student's name), what could you do to help the students who will be family members?

    b. If you are a dentist, (student's name), why would a doctor come to you? (A doctor has tooth decay, too.)

    c. How can a policeman and maintenance worker work together in the fight against vandalism? (The policeman might find the vandal, and the maintenance worker might repair the damage.)

    Continue to question until several relationships have been made apparent to each worker. (You might allow the student to role play his original "I want to be a ____________________" choice.)

3. ALLOW THE INTERACTION TO TAKE PLACE. You might assume a role, also. Do not interrupt the interaction unless the activity becomes disruptive and out of control. Give direction where needed. If pointing out relationships becomes a problem with your students, you may want to direct the group interaction more closely. You may also more clearly point-out these relationships by assigning individuals interaction situations, and asking them to draw a picture of this interaction.

E. Follow-up activities

1. REVIEW VOCABULARY WITH THE PICTURES AND POSTERS. (Ask what the worker is doing, what he is using and which worker it is.)

2. MAKE A STENCIL WITH HOME, SCHOOL, AND COMMUNITY WORKERS. On one side represent the school, the home and the community. On the other draw the workers.

Ask the students to draw lines from worker or role to the appropriate location. (Some workers and roles will have lines connecting them to several or all locations.). Use this as a tool to show relationships.

3. REFER TO THE FOLLOW-UP ACTIVITIES OF THE TWO PRECEDING UNITS.

4. ASK THE STUDENTS TO DRAW PICTURES OF HOME-SCHOOL-COMMUNITY WORKER INTERACTIONS. Ask them to refer to their actual interaction experiences. Compare the development of the students' home-school-community worker awareness by looking at their drawings from the preceding units and this one.

EVALUATION

C. COMMUNITY HELPER STUDENT CHECKLIST

	excellent	good	fair	poor
1. The student worked individually.	4	3	2	1
a. The student took direction and accepted responsibility.	4	3	2	1
b. The student experienced cause and effect relationships in decision-making.	4	3	2	1
2. The student worked in a group.	4	3	2	1
a. The student shared.	4	3	2	1
b. The student cooperated.	4	3	2	1
3. The student met Learner Objectives 1.-4.	4	3	2	1
4. Changes in the student's attitudes were:	4	3	2	1
5. Changes in the student's level of awareness about community helpers were:	4	3	2	1
7. Compare student checklist from the two preceding units with this one. The over all change in the student's level of awareness for home-school and community was:	4	3	2	1

7. Comments:

Materials and Resources

A. Material available through the NOW Program

1. _Careers with the Police Department_, book
2. "Drug Store Workers," W.O.W. Kit, filmstrip and record
3. "Fireman at Work," filmstrip
4. _I Want to be a Bus Driver_, book
5. _I Want to be a Dentist_, book
6. _I Want to be a Doctor_, book
7. _I Want to be a Fireman_, book
8. _I Want to be a Policeman_, book
9. _I Want to be a Postman_, book
10. "Mail Delivery," W.O.W. Kit, filmstrip and record
11. "Mr. Storekeeper," filmstrip
12. "Post Office Workers," filmstrip
13. "The Fire House," filmstrip
14. "The Policeman at Work," filmstrip

Transportation Occupations

Truck Driver

Grade 1

Developed by:

Lorraine Fournier
Grade 1 Teacher

In Cooperation with
the N.O.W. Staff

INTRODUCTION

This unit specifically deals with occupations related to truck driving. You may want to develop other units dealing with workers in different kinds of transportation. The activities in this unit will easily lend themselves to this sort of adaptation. You may want to use this unit in conjunction with other units about goods and articles that are commonly transported on trucks.

Karen McMahon
Activities Writer

Truck Drivers

I. Objectives

A. General objectives

1. To familiarize the student with the world of transportation.

2. To familiarize the student with truck driving occupations.

3. To increase the student's awareness of the truck driver's usefulness in society.

4. To integrate social studies skills and language arts skills with related occupational information.

B. Specific objectives

1. By the end of this activity the student will be able to list three ways that a truck driver can help him.

2. The student will be able to name four trucking jobs.

3. The student will be able to describe one work duty for each of these four truck workers.

4. The student will be able to identify the four different kinds of trucks. (for the above truck drivers)

5. The student will be able to name at least four products delivered by the four above trucks.

II. Activities

A. INTRODUCE THE TYPES OF TRANSPORTATION. Discuss and display appropriate pictures. Discuss generally the purposes of these transportation vehicles. Introduce general points of departure and destination that they usually travel. Emphasize product need, product manufacture, and product transportation, i.e., supply and demand.

B. INFORM YOUR STUDENTS THAT THEY WILL BE TALKING ABOUT TRUCKS. Introduce the various types of trucks that you will be discussing with pictures, laminations, and transparencies:

1. Straight truck
2. Pick-up truck
3. Trailer truck
4. Wrecker truck
5. Dump truck
6. Tank truck
7. Multi-stop truck
8. Automobile transporter truck
9. Agitator body truck

Some of the questions you might ask are:

Have you seen trucks anything like this before?

Where? Describe the person who was driving it.

What was this truck delivering?

Where do you think it was going?

What do you think the truck driver needs to know to drive a truck?

C. ASK SEVERAL TRUCK DRIVERS WHO DRIVE DIFFERENT KINDS OF TRUCKS TO COME AND TALK. Prepare your students for the visit by informing them who is coming and the kind of truck he drives. Ask them each to prepare several questions similar to the following:

1. What is your job?
2. What are some of the things you have to do?
3. Why is your truck well suited for your job?
4. How does your truck help you out?
5. What kind of truck is it?
6. What special equipment do you have on your truck?
7. How do you use this equipment on your job?
8. What kind of training did you have to have to be a truck driver?
9. Do you work for yourself or are you a part of a company?
10. What relationship is your job function to the company?

11. What are some of your interests outside of trucking?

12. Why did you decide to become a truck driver?

13. What are some of the places you have seen while trucking?

D. HAVE THE CLASS WRITE A THANK-YOU NOTE TO EACH TRUCK DRIVER. Relate all the information the students gained from the visit.

E. HAVE THE STUDENTS DRAW A PICTURE OF A REAL OR IMAGINARY TRUCK THAT THEY WOULD LIKE TO DRIVE. Display these pictures. Help the students write a short story about an imaginary experience of driving a truck. Ask them to tell about the goods they are transporting, who they are transporting the goods for, and where they are going. Write the story for them on a flip chart. Ask them to illustrate each page.

F. HAVE GROUPS PUT ON SHORT DRAMATIZATIONS OF A TRUCK DRIVER. Ask them to illustrate the following points:

1. Group 1: A truck driver must be a mechanic sometimes.

2. Group 2: A truck driver knows the rules for safe driving.

3. Group 3: A truck driver is always ready to help people who are in trouble on the road.

4. Group 4: A truck driver is a driving expert on crowded city streets.

G. CONDUCT A SHOW AND TELL. Use toy trucks that you and your students have brought in. Ask each student choose a truck and explain:

1. What kind of truck it is.

2. What the various special equipment is for.

3. What the truck driver usually does on a trucking venture.

4. The education and training required for a driver of this kind of truck.

H. GIVE VOCABULARY TERMS FROM A FILMSTRIP OR OTHER SOURCE ON TRUCKING. The N.O.W. Program has filmstrips on trucking that you might use for this purposes. (FS # A686 and A687) Have the class make-up sentences and stories using these words.

examples:

tow	trailer
(un)load	tractor
deliver(y)	tank
cement	carry

Have the class write sentences or short stories using these words as often as possible.

I. MAKE A DISPLAY OF ALL THE MATERIALS THE CLASS COLLECTED ON TRUCKING. Use these as resources to a final review of the material covered in the unit.

J. GIVE YOUR STUDENTS A POST-UNIT QUESTIONAIRE. This will determine if there has been any measurable changes in the students's knowledge about trucking and related occupations.

K. INTRODUCE UNITS ON OTHER FORMS OF TRANSPORTATION AND RELATED WORKERS.

IV. Materials and Resources

A. Materials available through the N.O.W. Program:

1. I Want to be a Mechanic, book

2. I Want to be a Truck Driver, book

3. "Trailers at Work," filmstrip

4. "Trucks at Work," filmstrip

B. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our "Resource Center" at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones

2. Video-tape equipment

3. Cameras, films, flash cubes

4. Projectors, screens

Agri-Business and Natural Resources
Occupations

THE FARM

Grade 1

Developed by:

Patricia Timberlake
Grade 1 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

You will find that the first grade student's innate curiosity about people, animals, and things will naturally guide him through the activities of this unit. This unit is about farms in general, but it may be adapted for more specific purposes such as a unit on the dairy.

The activities also enable the student to understand the role of the farmer in the working world. This is important since it provides an occupational base from which to build additional occupational areas.

School subject matter is well integrated. The unit provides the student with the opportunity to expand his vocabulary, use writing skills, and do addition and subtraction problems using farm implements, workers, and animals as variables.

If it is not possible for you to take the class to a farm as the unit suggests, the material in The Farm can still be useful for your class. You may use a film, filmstrip, or pictures as your main reference when doing the farm activities.

If you have any questions, please do not hesitate to contact either the developer of this unit or myself. We are interested in the growth of this unit in many first grade classrooms.

Karen McMahon
Activities Writer

Agri-Business and Natural Resources Occupations

The Farm

Developed by Patricia Timberlake
First Grade Teacher

I. Objectives

A. General objectives

1. To enable the student to understand the role of the farmer in the working world.

2. To help the student understand the farmer's function in supplying food to the market.

3. To become familiar with farm animals and to discriminate between their sounds.

4. To help the student show compassion toward animals.

5. To help the student utilize writing, reading, vocabulary and math skills.

6. To introduce the following concepts about work:

   a. Occupations exist for a purpose.

   b. Individuals differ in their interests, abilities, attitudes,and values.

B. Specific objectives

1. By the end of this activity the student will be able to state three different jobs that a farmer does.

2. The student will be able to describe how milk gets to the market in three steps.

3. The student will be able to name five animals and imitate their sounds.

II. Activities

A. ARRANGE A BULLETIN BOARD OF PICTURES OF FARM ANIMALS. Have the students print the names of the animals. Discuss the animals and the sounds they make. (Some good pictures are available through the Dingley-Jordan Resource Center or from the Maine Dairy Council.)

B. DISPLAY A LIFE SIZE PICTURE OF A FARMER. Discuss how the farmer cares for the animals. Arrange for a field trip to a local farm. Divide your class into three groups. Group 1 can take pictures of the farmer and his farm workers. Group 2 can record animal and farm sounds. Group 3 can record the class communications with the workers. Prepare the students to ask questions such as the following: How do the animals earn money for the farmer? What products do the animals provide for us? How do these products get to the market? (What workers are involved?) What kinds of work do the farmer and his helpers do? What are the farmer's machines and tools? How much does it cost the farmer to buy his animals? How much does it cost him to feed and take care of them? Have each child write his question(s) down on a piece of paper, and take them on the field trip.

C. DIVIDE THE CLASS INTO THE THREE ORIGINAL GROUPS. Assist them in planning an oral report of field trip findings. Tape record reports and allow individuals to listen to themselves at the learning center. Put the tape of animal and farm sounds in the learning center, too. Have each student use the tape recorder and name five animals he hears and then imitate their sounds.

D. DO SOME SIMPLE MATH PROBLEMS USING ANIMALS AND THE FARMER AS SUBSTITUTES.

Example:

> Farmer Jones had ten cows. He gave three cows away. How many cows does he have? (Do this in the form of pictures and words.)
>
> Use felt board models to do the following problem: Mr. McDonald had three workers helping him on his farm. Three just didn't seem to be enough though. He decided that he needed two more workers. If he hired two more workers, how many would he have?

E. CHOOSE FARM SUBJECTS AS VOCABULARY WORDS. Have the students write the words for practice, and later have them utilize them in a story about a farmer and his animals. Have the class draw pictures to go along with the story. You may want to start the class off. Write the story as they make it up on large, lined easel paper with a large, felt-tipped marker.

F. SHOW MOVIES AND FILMSTRIPS ABOUT FARMERS. The Maine Dairy Council has a film called "Jim Visits a Dairy Farm." Compare Jim's findings with the class findings on their field trip. Make an experience chart with the class of the story of milk from cow to consumer:

a. The farmer and his cows: Cows eat, and make milk; the farmer and his helpers milk the cows and store the milk.

b. A dairy picks the milk up.

c. Stores buy the milk to sell to the customer. Workers price, stock, and check out the milk.

G. REFER BACK TO THE LIFE SIZE MODEL OF THE FARMER. Use strips of oak-tag, and have the students write down at least three different jobs that a farmer does. Attach these tags to the model.

IV. Materials and Resources

A. Resources available through the N.O.W. Program

1. "Autumn in the Country," filmstrip

2. Dairy, book

3. "Dairy Product Delivery," filmstrip and record

4. I Want to be a Farmer, book

5. I Want to be a Dairy Farmer, book
6. Farm, a Fisher-Price model

B. Films: "Jim Visits a Dairy Farm" - available through the Maine Dairy Council

C. The NOW Program has a variety of audio-visual equipment and materials available at your request given reasonable notice:

1. Tape recorder, tapes, microphones

2. Video-tape equipment

3. Cameras, film, flash cubes

4. Projectors, screens.

Agri-Business and Natural Resources
Occupations
Marketing and Distribution Occupations
Consumer and Homemaking Occupations

FOODS

grade 1

Developed by:
Patricia Timberlake
Grade 1 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

FOODS is a way to introduce the very young student to the food chain and the importance of good food to good health. The unit can be easily integrated with social studies, health, science, reading, and/or language arts activities. There are many more things that you can do other than the activities suggested in this unit, and some of the suggested activities may not fit in well with your classroom plan. Whatever the case, feel free to use this unit as a career education resource. Contact the NOW Program concerning your findings when you try activities from this unit because we are open to your additional suggestions so that these learning packages may be adapted and improved.

Karen McMahon
Activities Writer

FOODS

Developed by: Patricia
Timberlake, 1st
Grade Teacher

I. Objectives

A. General objectives

1. To familiarize the student with the foods that are necessary for human growth.

2. To increase the student's understanding of the relationship between food and good health.

3. To introduce the concept that workers are involved in food production.

4. To introduce the following concepts about work:

    a. Occupations exist for a purpose.

    b. There is a wide variety of careers.

    c. Work means different things to different people.

5. To utilize and improve communication skills.

B. Specific objectives

1. The student will be able to name three workers who are involved in the story of the apple from blossom to consumer.

2. The student will be able to state two job functions for each of these three workers.

3. The student will be able to name: one fruit, one vegetable, one dairy product, one cereal product, and one meat product.

4. The student will be able to make a chart from magazine clippings illustrating a well-balanced breakfast.

5. The student will be able to state one reason why food is necessary for good health.

II. Activities

A. MAKE AN ATTRACTIVE DISPLAY OF FOODS. For example:

- a saucer of peaches
- a saucer of peas
- a bowl of cereal
- a piece of cake
- bread and butter
- a pork chop with a sprig of chicory
- a plate of macaroni and cheese
- a glass of milk
- a bottle of soda pop
- a candy bar

Tell the students to pretend that they are very hungry. Have them come to the table and choose what they would like to eat. Discuss the foods that would most satisfy their hunger and are necessary to make them grow. Discuss candy and soda pop in relation to good teeth.

B. ASSIGN THE FIVE FOOD GROUPS TO GROUPS. Ask them to cut out as many food group members from magazines as they can find.

group 1 - fruit
group 2 - vegtables
group 3 - meat,poultry, fish
group 4 - dairy products
group 5 - cereal products

C. WRITE A GROUP CHART STORY ABOUT EACH FOOD GROUP. An example of a fruit group might be a little boy that didn't like fruit or juices. He had many colds and missed a lot of school until he learned that he needed to drink them to keep him healthy. Tell the students to copy chart stories in a scrapbook along with a picture for each one. These could be taken home at the end of the unit.

D. LET YOUR STUDENTS PLAN, PREPARE AND SERVE A WELL-BALANCED BREAKFAST. Discuss the importance of eating a good breakfast. Orange juice, French toast with syrup, and milk are favorities and are easy to prepare. Plan to do this activity first thing in the morning. Following the clean-up period,give each student a magazine and instruct them to find or draw pictures illustrating a good breakfast on one page in their scrapbook.

E. FOLLOW THE STEPS IN FOOD GROWTH TO CONSUMPTION. For example, you might take the story of the apple from the farmer to the consumer.

1. DRAW AN APPLE BRANCH WITH BLOSSOMS AND A FARMER. Place a bowl of apples on a table. Ask the students if they would like to find out what happens and who is involved between the blossom and the farmer and the apple on their table. Use an opaque projector or overhead and show pictures of apple trees with people working around them. These pictures can probably be found in a pomological magazine.

2. PLAY "THE ORCHARD WORKERS" VIDEO-TAPE. This is available at the NOW Career Education Resource Center. As a follow-up discuss important details about workers and their jobs. Talk about at least two job functions for each worker discussed. Have the students write a short story about what they saw on the tape.

3. ASK THE CLASS TO GO TO THE SUPERMARKET TO OBSERVE THE KINDS OF THINGS THEY HAVE. After most have done this, instruct them how the workers at the store are involved in getting produce to the consumer. Discuss the workers and what they do: packaging, pricing, stocking, consumer pick-up, cashier, home to the table. Use the pictures taken on the orchard tour to summarize the apple activity. Ask the students to draw pictures of three workers they saw who are involved in getting apples to our tables. Ask them to name two things that each worker does on his job. Include the pictures in their scrapbooks.

4. CONDUCT SIMILARLY STRUCTURED ACTIVITIES ABOUT THE OTHER FOOD GROUPS.

IV. Materials and Resources

A. The N.O.W. Program can supply any audio-visual equipment you might need like films,projectors, cameras, flash bulbs, video-tape equipment.

B. The N.O.W. Program has the following materials and resources currently available for this unit:

1. "Autumn in the Country," filmstrip
2. _Dairy_, book
3. "Dairy Product Delivery," filmstrip and record, W.O.W. Kit
4. _I Want to be a Farmer_, book
5. "Apple Orchard," video-tape

Public Service Occupations

SAFETY AWARENESS

Grade 1

Developed by:

Patricia Timberlake
Grade 1 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

You may use this unit in conjunction with part III of a series of kindergarten-first grade units called "Community Helper."

Safety Awareness is a necessary addition to the first grade curriculum. These students are naturally becoming more aware of their community. Activities in this unit can expand this awareness and encourage the student to think and act responsibly for his own safety and for the safety of others.

Community helpers play a very important part in this unit. The student discovers that in case of an emergency, there are people in the community who can help.

Karen McMahon
Activities Writer

Public Service Occupations

Safety Awareness

Developed by Patricia Timberlake
First Grade Teacher

I. Objectives

A. General objectives

1. To help the student recognize the importance of following safety rules.

2. To help the student to understand the roles of public service occupations pertaining to safety.

3. To learn the procedures for receiving help during an emergency.

4. To learn the basic form of writing a letter.

5. To introduce the following concepts about work:

   a. Students must understand and accept themselves in order to become good workers.

   b. Occupations exist for a purpose.

B. Specific objectives

1. The student will be able to name four community workers who are involved in public safety occupations.

2. The student will be able to state one reason why each of the above workers is necessary for the safety and health of themselves and others.

3. The student will be able to state step by step the procedure he would have to follow in case of an emergency such as an accident,fire, or injury.

4. The student will be able to state two reasons why safety rules should be followed.

II. Activities

A. HAVE THE CLASS MAKE ROAD SIGNS FROM CARDBOARD AND COLORED PAPER. Bring in a bicycle or several bicycles. Set up the models of traffic safety signs and lights. Discuss the meaning of each. Have students take turns riding the bicycles on the road. Have a student "policeman" or "policewoman" make sure the signs and rules are observed. Hold the bicycle for students who haven't learned to ride. Simulate accidents that might occur if signs and rules are not observed.

B. HAVE THE LOCAL POLICE LIAISON OFFICERS COME IN AND TALK ABOUT ROAD SAFETY. Local officers have a road safety puppet show which you might ask them to show. Have them discuss why the policeman is very important in enforcing the rules and signs.

C. SHOW THE FOLLOWING 16MM MOVIES.They are available on request through the University of Maine Film Library. (The N.O.W. Program will order for you. Give your order at least two or three weeks in advance.)

   a. "Safety After School"

   b. "Safety on Our School Bus"

D. HAVE EACH STUDENT CONTRIBUTE A PAGE DRAWING TO A SCRAPBOOK OF ACCIDENTS. Follow-up with a discussion on how each could have been avoided.

E. MAKE ARRANGEMENTS TO VISIT THE LOCAL FIRE STATION. Invite a fireman to talk to the students about his job at the station. Take tape recordings and slides of your visit.

   1. Previously help the student to think of a question to ask concerning fire prevention and emergency procedures.

   2. Give the students an opportunity to ask their questions about the fireman's job.

   3. As a follow-up, watch the NOW Program's video-tape on the fire department. Point out important details. Have the students draw a picture of the part of their tour that was most interesting to them. Have each student compose a letter to their parents telling them about their career field trip. Encourage the students to take their picture and letter home.

F. HAVE A PUPPET PRODUCTION

   1. Divide the class into 8 groups.

   2. Instruct 4 groups to plan and present a show about what to do in case of an accident. Let the students decide the type of accident.

   3. Have the other 4 groups plan and present a show on 2 important aspects of a fireman's job and two important aspects of a policeman's job. The teacher may want to assist all groups in their planning sessions.

IV. Materials and Resources available at the N.O.W. Program's Resource Center at Lewiston Comprehensive High School.

- A. Books
  - 1. Careers with the Police Department, K-4
  - 2. I Want to be a Policeman, K-4
- B. Filmstrips
  - 1. "Fireman at Work," K-4
  - 2. "Larry Helps the Police," K-4
  - 3. "The Fire House," K-4
- C. The NOW Program has a variety of audio-visual equipment that is available on request given reasonable notice.

Communications and Media Occupations

Business and Office Occupations

TELEPHONE WORKERS
AND
USING THE TELEPHONE

Grade 2

Developed by:

Mary Joyce

Grade 2 Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

This unit can be a part of a larger program on different types of communication. You can begin the unit by talking about the word communication and what it means. Then, introduce the telephone. You may want to follow this unit on the telephone with similar units on other forms of communication like the newspaper, radio, and television.

Telephone Workers not only widens the student's occupational awareness, but it provides the student with a very valuable skill: using the telephone in emergency situations and in general communication. Math is used in counting change. Science becomes a part of the activity when the students discover how vibrations (sound) travel by making model telephones. Communication skills are used throughout the unit. Choose the activities from this unit that are most appropriate for your classroom individuals. Feel free to add activities of your own. The NOW Program is most anxious to hear of your success with this career education unit.

Karen McMahon
Activities Writer

Developed by Mary Joyce
Grade 2 Teacher

Communication and Media Occupations

Telephone Workers and Using the Telephone

I. Objectives

A. General objectives

1. To familiarize the student with workers in telephone companies.

2. To give the student an opportunity to use the home and pay phone.

3. To introduce the student to good telephone habits.

4. To make the student aware of the telephone operator and how this worker can help him.

5. To familiarize the student with the telephone as a means of communication.

6. To reinforce and use language arts, math, science, and artistic skills.

B. Specific objectives

1. By the end of this unit activity the student will be able to name three workers that work for telephone companies.

2. The student will be able to name one duty for each of these workers.

3. The student will be able to dial his own number on the telephone.

4. The student will be able to dial the following emergency numbers: police, doctor, fire department, hospital, ambulance.

5. The student will be able to select the proper coins to make a local call on a pay phone.

6. The child will be able to demonstrate the use of a pay phone

7. The student will be able to distinguish his family name, address, and phone number in the telephone book.

8. The student will be able to demonstrate his ability to answer the phone and relay a message.

II. Activities

A. INTRODUCE THE CONCEPT OF COMMUNICATION AND THE DIFFERENT FORMS OF COMMUNICATION. Tell the class that they will find out about telephones. Talk about some important uses for the telephone: emergencies (fire department, hospital, police, operator), telling news to friends, calling parents or relatives.

B. PREPARE YOUR CLASS FOR A RESOURCE PERSON VISIT FROM THE PHONE COMPANY. If possible ask him to bring in a mock private phone and a mock pay phone. Prepare your class to ask questions about the resource person's job and the company he works for. Document the visit with pictures, tape recordings, and, if possible, video-tape equipment. Ask the students to bring in their telephone numbers. Practice counting money for use in a pay phone.

1. Let the students practice dialing their telephone numbers.

2. Show them the difference between a home and pay telephone.

3. Have a math lesson. Discuss and use the proper coins for using a pay phone. Let the children deposit their money in the mock pay phone and call a friend or relative.

C. INTRODUCE THE PHONE BOOK.

1. Let the class see if they can discover how the phone numbers are listed.

2. Conduct a brief lesson on alphabetization of last names first in the phone book.

3. Let the students find their parents' names and the name of a friend in the phone book.

4. Use the telephone book to reinforce or develop research skills:

   a. Emergency numbers: police, fire department, hospital, doctor

   b. Addresses of popular stores in the community

   c. Local addresses needed for letters or invitations

   d. Using the yellow pages to look up various businesses in the community

D. MAKE A CLASSROOM TELEPHONE DIRECTORY. For slower students each name can be color coded so they can easily recognize their names and friends' names.

E. PRACTICE WAYS TO ANSWER THE TELEPHONE. Let the student choose a partner and converse with him.

F. SET UP SOME EMERGENCY SITUATIONS. Discuss the information that must be given in case of an emergency: name, what has happened, and the location.

   a. Calling the police department

   b. Calling the fire department

   c. Calling the hospital

   d. Calling the operator

   e. Calling a neighbor or relative

   Discuss what the police department, fire department, and operator can do in case of an emergency. Talk about the job roles involved. How can the operator help in case of an emergency? What other things does the operator do? (check numbers, information, take long distance calls, etc.)

G. HAVE THE CLASS MAKE DECALS OF IMPORTANT NUMBERS ON GUMMED PAPER. The students may use these on home phones.

H. HAVE THE STUDENTS PRACTICE TAKING MESSAGES ON THE PHONE. You can do this by tape recording some common messages and playing them to the students. They can practice writing down the message, and reading it back at your request. At this time you can make some telephone tally pads for taking down messages.

I. DISCUSS WHY THE PHONE COMPANY IS IMPORTANT, AND WHY MOST PEOPLE HAVE A PHONE. Ask them to ask their parents if they have a phone, and why they have a phone.

J. CONSTRUCT SIMPLE TELEPHONES.

   1. Discuss briefly sound waves and vibrations. (Use your science text or an encyclopedia as a reference.)

2. Have the students pair-up and make telephones. A twenty foot length of string can be connected on the bottoms of two paper cups. Punch a hole in the bottom of each cup. Insert the string in each hole, and tie a knot in each end. You can do the same exercise with a larger container. Have the students note the difference in the quality of the sounds.

K. DO SOME ROLE PLAYING ACTIVITIES WITH TELEPHONE WORKERS:

a. Operator

b. Telephone repairman

c. Telephone assemblers (making the play telephones)

d. Business and clerical workers

L. ASK YOUR CLASS TO WRITE AN EXPERIENCE STORY. Ask them to name three telephone workers. Make a sequence of pictures illustrating this experience.

M. MAKE A BULLETIN BOARD ABOUT THE DIFFERENT OCCUPATIONS COVERED IN THIS UNIT.

N. MAKE A CHECKLIST OF GOOD TELEPHONE HABITS WITH THE CLASS.

IV. *Materials and Resources*

A. The N.O.W. Program also has a variety of audio-visual equipment such as cameras, film, flashbulbs, projectors, videotape equipment, and screens.

B. Reference Manual for Office Personnel, (put out by the phone company) Unit 14, page 153 for teacher reference.

C. Classroom materials available through the NOW Program:

1. Telephone directories
2. Careers in a Telephone Company, book
3. I Want to be a Secretary, book
4. I Want to be a Telephone Operator, book
5. "Office Workers," no. 114, filmstrip
6. Telephone Company, book
7. Telephone Services, WOW Kit, filmstrip - record

Fine Arts and Humanities Occupations

Communications and Media

Occupations

CAREERS IN MUSIC

grade 2

Developed by:

Audrey Davis
Grade 2 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

During the year the music teacher usually introduces musical instruments and rhythm. At this time the regular classroom teacher can also introduce sound as a science unit.

The teacher can perform various experiments with sound. Some of the most interesting experiments with sound are with musical instruments. At this time, careers in music can also be easily introduced. The class can listen to other people playing music and their own music and can discuss how the different sounds make them feel.

Feel free to adapt this unit to the needs of your classroom individuals. The growth of this unit will benefit other classrooms, if you contact the NOW Program concerning your implementation plans.

Karen McMahon
Activities Writer

Developed by Audrey Davis
Grade 2 teacher

Communications and Media Occupations
Fine Arts and Humanities Occupations

Careers in Music

I. Objectives

A. General objectives

1. To familiarize the student with occupations in the music field.

2. To introduce the student to the following concepts about work as they relate to music careers:

    a. An understanding and acceptance of self is important throughout life.

    b. Persons need to be recognized as having dignity and worth.

    c. Occupations exist for a purpose.

    d. Work means different things to different people.

    e. Individuals differ in their interests, abilities, attitudes and values.

3. To give the student an opportunity to listen to and see people playing different musical instruments.

4. To familiarize the student with sound and its properties in a scientific sense.

5. To familiarize the student with the arithmetic skills of measurement.

6. To introduce the concept of leisure as a productive time in our lives, and how music can make it more meaningful.

B. Specific objectives

1. The student will be able to name one occupation related to music.

2. The student will be able to state one aspect of this work role.

3. The student will be able to tell the difference by appearance and sound of the following instruments: stringed, brass, woodwind, and percussion instruments.

4. The student will be able to describe how three different pieces of music affect him or make him feel.

5. The student will be able to select a good sound conductor given a choice of three materials.

6. The student will be able to make a simple musical instrument.

II. Activities

A. INTRODUCE SOUND AS PART OF A SCIENCE LESSON. Explain how sound is conducted. Do sound experiments in groups. For example, you might split the class up into several groups. Give each group several materials and ask them to decide which materials are the best sound conductors. You could give them things like: cloth, metal, string, rubber bands, wood sticks, etc. Discuss the different kinds of sounds. (Refer to Concepts in Science, Bradwein, Cooper for units in sound, or any other science text that might have similar units.) Introduce music as sound. Play several different kinds of music with different instruments. Explain the different types of instruments: stringed, brass, woodwind, and percussion. Show pictures of instruments as examples of these classifications.

B. LET YOUR STUDENTS MAKE SIMPLE MUSIC INSTRUMENTS. Refer to books in "IV. Materials and Resources" for ideas in constructing classroom instruments. Group your students according to what they want to make. You might ask mothers or parents to help the groups make their instruments. Mimeograph instructions for each student's instrument so that he may have his own working plans. Mathematics comes into instrument making because the plans are set up so that they will make actual musical sounds, if the measurements are precisely followed. Display pictures of craftsmen making instruments. Tell the class that they are very much like the workers in the pictures.

C. HAVE GROUPS EXPLAIN HOW THEY MADE THEIR INSTRUMENTS TO THE REST OF THE CLASS. Take pictures and tapes of these presentations to use at a later date for review and display.

WHILE ACTIVITIES B. AND C. ARE GOING ON, PLAY MUSIC ON THE RECORD PLAYER OR TAPE PLAYER AS MUCH AS POSSIBLE SO THAT THE STUDENTS WILL GRADUALLY BECOME MORE FAMILIAR WITH THE DIFFERENT SOUNDS OF MUSIC.

D. LET THE STUDENTS PLAY THEIR INSTRUMENTS. Tape this experience on the video-tape recorder. Play the tape back to the class and to parents and other classes. Let the students perform with their instruments in front of other classes. (Kindergarten students would particularly enjoy the simple rhythms.) Let the students tell how they made their instruments. Before the students perform tell them that they are very much like the musicians they have been hearing on records and tapes, but the musicians on the records and tapes do this for a living.

E. BRING IN SOME RESOURCE PERSON WHOSE CAREER IS MUSIC. (Music teacher , band teacher, conductor, guitar group, Portland Symphony Orchestra participant, musical instrument maker or repairer, or a singer) Have the class as part of an English assignment write an invitation to their speaker.

F. PREPARE THE CLASS FOR THE SPEAKERS. Have some students in charge of the tape recorder, and some students in charge of cameras for documentation of the resource person's visit. Prepare the class to ask some questions. For example:

1. What does your career have to do with music?
2. What instruments do you play?
3. Is this a stringed, brass, woodwind, or percussion instrument?
4. Where do you work?
5. Why do you do this?
6. What are some advantages and disadvantages to your career?

G. LET THE STUDENTS HAVE HANDS-ONS EXPERIENCES WITH MUSICAL INSTRUMENTS. Explain music as being a part-time or leisure-time activity for some people. Use the high school student who plays music in the band or orchestra, or the student who plays by himself or with a group as an example.

H. PREPARE THE CLASS FOR A FIELD TRIP TO THE HIGH SCHOOL BAND ROOM. Let the band director answer questions about his work. Show the students the various instruments. If possible allow them to see the students playing their instruments together. Let your class ask the students questions about why they play music, why they play that instrument, why they like it, etc. Document this field trip experience with tapes, pictures, and slides. Prepare your students for the trip by instructing them on what will be expected of them.

I. MAKE AN EXPERIENCE CHART TO CONCLUDE AND REVIEW.

IV. Material and Resources

A. Books: I Want to be a Musician, Carla Green, Sterling Publishing, 1959. (available through the N.O.W. Program)

Concepts in Science, Bradwein, Cooper, Blackwood, Hone; Harcourt, Brace, and World, Inc., 1966. (school text)

The True Science Library, Children's Press, Chicago, Volume 2, 1966.

The Musical Instrument Recipe Book, McGraw-Hill, Newton, Mass.

Making and Playing Classroom Instruments, Vernazza, Ferron Publishers, California, 1959.

Make Your Own Instruments, Mandell, Wood; Sterling Publishing Co., Inc., 1959.

B. Films: "Adventures in Sharps and Flats" #33225 Grade 1-6 16mm sound, 23 minutes, Modern Talking Pictures Service, 1964.

C. Classroom materials available through the NOW Program:

I Want to be a Musician, book.

D. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorder, tapes, microphones
2. Video-tape recording equipment
3. Cameras, films, flash cubes
4. Projectors, screens.

HEALTH OCCUPATIONS

grade 2

Developed by:
Anne Cheney
Grade 2 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

When school starts in September in Lewiston, elementary students receive a visit from the school nurse. You may want to take this opportunity to introduce a unit on health careers to your students. You might start with this activity about doctors, nurses, and hospital workers, then follow it with several other activities like the dentist and optometrist

Second graders have reacted very enthusiastically to the activities in this unit. It gives the learner a chance to alleviate fears about doctors and the hospital at an early age. The young student's innate curiosity about the human body serves as a good motivator not only to learn about health workers but to learn about good health habits and a few basic functions of the body such as: digestion, breathing,circulation and the heart, and growth.

Karen McMahon
Activities Writer

HEALTH OCCUPATIONS

Developed by: Anne Cheney
Gr. 2
Teacher

I. Objectives

A. General objectives

1. To help develop an awareness of the importance of workers in health occupations.
2. To help develop an understanding of the kind of work these people do, and why they do it.
3. To help develop an understanding of how and why these workers in health work together and help one another.
4. To introduce the various tools these workers use and how they are used.
5. To help develop better health habits.
6. To reinforce the language arts skills of sharing ideas and discussing them, and making accurate observations.
7. To reinforce the math skills of counting and measuring.
8. To encourage the student to use his artistic and creative talents.

B. Specific objectives

1. When the activity has been completed the student will be able to identify at least three careers pertaining to health occupations in the hospital other than a doctor.
2. The student will be able to identify at least one instrument that each of the above workers uses.
3. The student will be able to name two different kinds of doctors other than the general practitioner.
4. The student will be able to state two ways that health occupation workers are helpful to us.

IX. Activities

A. ASK THE SCHOOL NURSE TO COME INTO THE CLASS AND SPEAK ABOUT WHAT SHE DOES AT THE SCHOOL FOR THE STUDENTS. Ask her why she is a school nurse. The N.O.W. Program has a videotape of a school nurse visit to a second grade classroom.

B. INTRODUCE THE VARIOUS OCCUPATIONS IN THE HEALTH FIELD. Have the students bring in and draw pictures of hospital workers, but first, show some filmstrips and other resources to the class about health workers. (Refer to the N.O.W. Program's Resource List under Health Occupations and your grade level index.)

C. HAVE YOU OR YOUR STUDENTS READ: I Want to be a Doctor, and I Want to be a Nurse. Have students take turns at relating what happened in these stories.

D. ASK YOUR STUDENTS WHAT THEY WANT TO BE. Have each give a short oral or written report:

1. Why I want to be a doctor.

2. Why I want to be a nurse.

3. What I would like to be when I grow up.

Provide some general career information materials or in some cases specific information from the N.O.W. Resource List. You may want to explore the self-concept further by using the S.R.A. Self-Awareness KIT.

E. MAKE UP A VOCABULARY LIST OF WORDS PERTAINING TO HEALTH AND HEALTH CAREERS. You might have the class write stories using these words about workers in health, or have the class draw appropriate pictures for the words, and print the words underneath. Display the posters and refer to them throughout the unit activities. Some of the words you might use are:

1. Doctor
2. Specialist
3. Physical therapist
4. Nurse
5. X-ray
6. Technician
7. Surgeon
8. Sickness
9. Health
10. Thermometer
11. Bandage
12. Gauze
13. Medicine
14. Tonsils

Print the words on flip charts for quick vocabulary reference.

F. HAVE THE STUDENTS RELATE IN ORAL DISCUSSIONS EXPERIENCES THEY HAVE HAD WITH THE DOCTOR OR HOSPITAL. Tape record these experiences so that the students can compare and improve their speaking skills.

G. WRITE SHORT DRAMATIZATIONS OF:

1. A trip to the doctor's office.
2. A trip to the hospital.
3. Taking an x-ray.
4. A trip to the school nurse.

You might ask several student nurses from the local hospital to come in and help with the presentations. They could also explain their jobs, and how they depend on other workers at the hospital.

Have the students make their props and scenery from classroom materials. Video-tape record these dramatic presentations. Write an account or have some students write thank-you notes to the student nurses.

H. MAKE BULLETIN BOARDS USING HEALTH CAREERS INFORMATION AND ACTIVITY PRODUCTS.

I. PRACTICE USING AND READING A THERMOMETER. To continue this, measure height, and weigh students. Also discuss good habits. The school nurse may want to come in and discuss how the students should take care of themselves. (Eating properly, brushing teeth, washing, staying home from school when sick, etc.)

J. REVIEW THE MATERIAL COVERED IN THIS CAREER ACTIVITY BY SHOWING FILMSTRIPS AND GOING OVER STUDENTS REPORTS. Make sure you bring up enough material to cover the objectives of this activity. Some of the things you might do are:

1. Have a final discussion about health occupation workers.
    a. Why and how do these workers depend on each other?
    b. What kinds of people work in the health occupations?

    c. What workers are in health occupations?

    d. What do they do?

    e. What are some of the tools they use?

At this time make an experience chart for the class on the blackboard or bulletin board showing what they have learned.

2. Have several students assume the role of a health occupations worker. Have the rest of the class ask questions to find out what worker the student is.

3. Have the students put together scrapbooks about the health occupation workers covered in your unit.

4. Introduce workers in health occupations other than hospital workers like dentists, optometrists, etc. Conduct activities for these workers along the same lines as hospital workers.

IV. Materials and Resources

A. The NOW Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tape, microphones
2. Video-tape recording equipment
3. Cameras, film, flash cubes
4. Projectors, screens

B. Teacher references available through the NOW Program:

1. Guide to Health Careers in Maine
2. Occupations and Careers, Feingold-Swedloff, McGraw Hill

C. Classroom materials available through the NOW Program:

1. Careers in a Medical Center, book
2. Hospital, book, Sextant Series
3. I Want to be a Dentist, book
4. I Want to be a Doctor, book
5. I Want to be a Nurse, book
6. "Workers for Health," no. 121, filmstrip
7. "Let's Meet the Doctor," 3M Series, cassette
8. "Let's Meet the Nurse," 3M Series, cassette

USING CAREER EDUCATION IN YOUR
READING CENTER

Grade 3

Developed by:
Paula McGrath
Grade 3 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

This is an unusual and useful learning package for teachers in grades 1-3. Generally, it is a prescription for using career education in your reading program without disrupting it. Any of the 15 career clusters may be used here. It is up to you to supply the specifics. Here are the fifteen career clusters:

1. Business and Office Occupations
2. Communications and Media Occupations
3. Manufacturing Occupations
4. Transportation Occupations
5. Construction Occupations
6. Natural Resources and Agri-Business Occupations
7. Marine Science Occupations
8. Environmental Control Occupations
9. Personal Service Occupations
10. Health Occupations
11. Public Service Occupations
12. Fine Arts and Humanities Occupations
13. Marketing and Distribution Occupations
14. Recreation and Hospitality Occupations
15. Consumer and Homemaking Occupations

The transportation occupational cluster is often used here as an example, but any of the career clusters may be substituted. We suggest that rather than trying to take these activities in sequence, you choose only the activities that are most appropriate for your career and reading projects.

Karen McMahon
Activities Writer

A Brief Description of the Reading Center

Physical arrangements: Designate one section of the classroom for the Reading Center. Desks or tables can be clustered to give the desired effect. Have the Reading Center close to the Arts and Crafts Center so that when a student wants to recreate a story in pictures, paints, sculpture, or other materials his needs will be readily available.

Equipment: The equipment needed should include tables and chairs, book shelves, magazines and newspaper racks, and a bulletin board. A felt board, a file cabinet, a tape recorder, some ear phones, and a filmstrip projector. are useful items.

Number of students at one time at the center: The career reading activities involved and the maturity of your students are the deciding factors. If you will be acting only as a consultant to the reading center or if you have a teacher aide, you may be able to have as many as six students at the center at a time. If your efforts will be concentrated on other centers, perhaps three or four children will be a more realistic number for you.

Items and Materials: Here are some of the items and materials you will want to include in the reading center for your career education activities and other special projects:

a. Pictures books

b. Poetry books

c. Books checked out from school and local libraries

d. Different levels of basal readers

e. All kinds of career information (much is available through the N.O.W. Program)

f. Reading games-commercial, teacher and student-made

g. Book reports and character sketches made by students

h. Posters

i. "My Weekly Reader," "Scholastic Magazine," and similar periodicals

j. Information on how to write

k. Current newspapers and magazines

l. S.R.A. READING LABORATORY

m. Word cards for making phrases and sentences

n. TV strips of stories read by the class

o. Experience charts

p. Filmstrips

q. Charts of stories with missing words

r. Puppet theater

s. Riddle books

t. Feltboard stories

u. Dioramas and peep-boxes showing story scenes

Appeal: To make the Reading Center as appealing as possible include a rocking chair, stuffed animals and a rug. From an occupational standpoint, you can even discuss with your students the processes by which these articles were obtained.

I. Objectives

A. General objectives

1. To increase the student's awareness of varied work roles in the fifteen occupational clusters.

2. To introduce to the students the following concepts about the world of work:

a. An understanding and acceptance of self is important throughout life.

b. Persons need to be recognized as having dignity and worth.

c. Occupations exist for a purpose.

d. There is a wide variety of careers which may be classified in several ways.

e. Work means different things to different people.

f. Education and work are interrelated.

g. Individuals differ in their interests, abilities, attitudes, and values.

3. To develop and reinforce reading skills.

B. Specific objectives - these objectives will have to be developed for each occupational cluster that you take up. They would include specific reading objectives as well as specific objectives concerning work roles in the selected career cluster. The following objectives are examples of what a reading teacher might develop for a unit on Transportation Occupations in the reading center.

1. By the end of this unit the student will be able to list five ways goods are transported.

2. The student will be able to name five ways that people travel.

3. The student will be able to name five roles in transportation that he feels he would like to investigate further.

4. The student will be able to name the education/training requirements, two duties, two necessary skills as related to his own interests.

5. The student will be able to make a list of ten new vocabulary words he encountered in this unit.

6. The student will be able to write a short story about a transportation worker using the ten vocabulary words.

II. Activities - Activities with an asterisk* apply to the above mentioned specific objectives. Choose activities from this list that are most appropriate for your career projects.

*1. HAVE YOUR STUDENTSWRITE A REBUS STORY. Use an "I Want to Be" book that relates to the career cluster that you are taking up. Write the rebus story using names of workers, tools, and duties. (This activity can meet specific obj. no. 6.)

*2. PREPARE A PICTURE DICTIONARY. Use the cluster of workers you are currently working with in class. Cut out pictures from magazines to illustrate words that have been selected for the dictionary. Paste the pictures on heavy paper with the word and a definition. Gradually add words and pictures to this dictionary until you have covered a great variety of occupations in the fifteen career clusters. (Specific obj. no. 5.)

3. SELECT FIVE DIFFERENT WORDS PERTAINING TO THE GROUP OF WORKERS YOU ARE TAKING UP. Use the students' original responses, or ask them to recall words from stories about these workers. (Refer to the "I Want to Be" series or other appropriate career resources for your grade level. Check-out the N.O.W. Program's Resource List.) Look up these

meanings. As a reading center exercise scramble the letters and ask the students to unscramble them.

•4. MAKE A LIST OF WORDS OF ALL THE WAYS THAT PEOPLE GET TO WORK. Have the students draw pictures that depict each way. This activity is good as a categorizing exercise. The topics are endless. (specific obj. no. 2.)

5. DO SOME SYNONYM EXERCISES.

For example:
automobile-car
locomotive-train
aviation-flying
cargo-goods, supplies

Do this exercise orally or written with the use of dictionaries.

•6. WRITE HAIKU POEMS ABOUT VARIOUS WORKERS. Afterwards, have the students do a Japanese brush stroke painting of their worker performinga job duty. (Haiku is a 17 syllable three lined (5-7-5) poem) (specific obj. 4)

Example:
I looked and I saw
The bus driver stop his bus
And open his door.

•7. HAVE A PANEL DISCUSSION ABOUT WORKERS IN A PARTICULAR CLUSTER OF OCCUPATIONS. Assign the four or five students on the panel a different job within the occupational cluster you are currently discussing. Use the "I Want to Be" series and "Popeye Career Comics" as references. Have each member of the panel discuss the advantages and disadvantages of their occupation. Also, have them discuss whether they like the job or not. If they don't like the job,ask them to give a reason and tell what job they would rather have out of the jobs given to the group members. Have the rest of the class listen to this discussion, and later have them evaluate the students on the panel according to some of the following criteria:

a. Did the speaker speak clearly and understandably?

b. Did the speaker know enough about his job so that he could give good reasons for liking or not liking his job?

You might tape record the whole sequence to use later as a follow-up to another discussion. This way you can compare the relative improvement of each speaker not only in speaking ability, but in understanding and attitude growth.

(This activity can complete the requirements for specific obj. no. 4.)

3. DISTRIBUTE PICTURES OR POSTERS THAT DEPICT THE KINDS OF WORKERS YOU ARE CURRENTLY DISCUSSING. Ask them to name the worker. Have the students write a short paragraph about the worker in each picture. Here are some ideas to direct the paragraph writing:

   a. Tell me what this worker is doing?

   b. Does he look happy?

   c. Does he look sad?

   d. What does he need to do his job?

9. DO AN EXERCISE IN STORY SEQUENCE. Make up short stories in class about workers and their jobs. Print each sentence of the story if possible on one line of composition paper. Cut each sentence out. Have enough stories or copies of stories to give one to each student at the reading center. Let the students shuffle the sentences until they think they have the story in the right order. Have them read the story the way they have it. Then decide as a group whether the sequence is correct. Do this for each student at the reading center.

10. READ A "POPEYE" STORY OR AN "I WANT TO BE" BOOK, OR MAKE UP A STORY OF YOUR OWN. Start to relate the story in your own words for about a minute. Then ring a bell or buzzer. Ask the student next to you to continue the story about the workers in his own words. Ring the bell after about a minute and ask the next student to continue. Continue this until all the members at the reading center have had a chance to speak.

11. ORGANIZE A LIBRARY CLUB. Help organize and select classroom books and materials appropriate to the career area you are taking up. Members should be responsible for checking out and returning borrowed books. Once a week have a meeting to discuss the organization of the club, and have one member responsible for a short book review.

12. USE THE BULLETIN BOARD TO MAKE SPECIAL ANNOUNCEMENTS ABOUT CAREERS YOU ARE DISCUSSING. Display magazine cuttings, drawings, and labels.

13. WRITE SHORT SCRIPTS FOR PUPPET PLAYS. Write the plays about workers in the occupational cluster that you are studying. For transportation occupations you might ask two students to put on a short puppet show about the bus driver and the

people who ride on the bus. You might enact a group of workers getting together on their rest period with conversations about their jobs and their personal lives.

14. MAKE A CARTOON BOOK ABOUT ONE OF THE STORIES YOU HAVE READ TO THE CLASS. Have the students depict in cartoons the important things that happened in the story.

15. MAKE TELEGRAMS. Use words from magazines and newspapers. Have your students take the letters and words and construct a telegram from them by pasting the letters and words on paper. Have them pretend they are sending a telegram to their best friend telling them about a new job.

16. TAKE PICTURES AND TAPES TO DOCUMENT A CAREER FIELD TRIP OR RESOURCE PERSON VISIT. Have a small group of students plan an oral presentation with the slides, photographs, and tapes.

17. WRITE SOME ALPHABET ALLITERATION STORIES. Assign each participant at the reading center a letter of the alphabet. Ask them to use this letter as often as possible in developing a story about a worker in the occupational cluster you are taking up. For example: "Fabulously Funny Frankie and His Fantastic, Fascinating Freight Train" would make a good beginning to a story about a worker in transportation occupations.

18. USE THE S.R.A. READING LABORATORY. Use parts that pertain to workers.

19. ASK A RESOURCE PERSON WHO WORKS IN THE OCCUPATIONAL CLUSTER YOU ARE TAKING UP TO COME INTO THE CLASSROOM. Allow them to interview him about his work. Before the resource person comes instruct your students to ask questions like the following.

    a. What is the title of your job?

    b. What are your duties?

    c. What are some of the tools and implements you use?

    d. What are their purposes?

    e. What do you like about your work? What do you dislike about it?

    f. What are some of your outside interests?

    g. What kind of education and training was necessary to get your job?

Either document this interview with slides, photographs, and tapes, or list the key words and have the class draw pictures to go along with the event. Display this on the reading center bulletin board.

20. MAKE STORY PLOTS BY USING PICTURES OF WORKERS FROM YOUR CURRENT OCCUPATIONAL CLUSTER. Ask or write on the backs of the pictures questions like these: Who could these people be? Where are they? When is this happening? What are they doing? What happened before this picture?, etc. Let the pupils write a story from these pictures and questions. Stories with pictures could be put together to make a class storybook.

21. MAKE SOME PLOT FOLDERS. Fold 9"X12" manila paper like a small book. Put student drawn pictures or magazine pictures on one side. Put a word list on the other side.

    For example: A picture of a truck driver is placed on one side of the folder. On the other side of the folder is this sentence: "I am a truck driver named Terry." Follow this sentence with a list of words the student might need to write a story about a truck driver: diesel engine, forward, reverse, tractor, trailer, gears, long distance, different units, training, experience, etc. The plot folders could be kept in a story box so that the students could go to the reading center and write these stories. You could keep the pictures and words in a shoe box rather than pasted on a manila folder.

22. MAKE ADVENTURE STORIES. Display a picture of a worker from the occupational cluster you are currently taking up. Every day have a different student make up a new adventure for the worker of the week and put it on a story chart. Bind the stories into a large book or make individual booklets of the stories.

23. USE EVERY DAY REFERENCES: "TV Guide," television, newspapers, telephone books, and the radio. Find out new things about workers you are taking up, and improve reading and listening skills.

24. WRITE A STORY USING AS MANY ECHOISMS AS POSSIBLE. Echoisms are words that imitate sounds like bang, pop, roar, etc. For example you might take the class on a career field trip to a factory, airport, newspaper, dairy, farm, or grocery store. You can ask the student to write a short story using the sounds that he heard.

III. Evaluation

Your evaluation of the individual child's work may depend on your own philosophies about education. The evaluation can be as formal or informal as you want it to be. It should be a cooperative venture and may be a collection of the child's work or a discussion by one of the team learning groups. The evaluation should be a continuing process, so you should make arrangements to give the students some sort of pre-test before you start to institute this program. A post-test will be necessary to make a final evaluation of the results of your projects.

If you want your students to become questioning and self-directed individuals, you will help them to define their objectives and values by giving them the opportunity to make decisions in completing their activities. Make their objectives apparent to them before they embark on this program.

The reading center can be considered successful if the students begin to develop their own reading activities and voluntarily frequent the center.

Here are some questions you might ask yourself in planning your reading center:

1. What did you plan to accomplish through this program?

2. Are your planned activities suited to the level of your individual students?

Here are some questions you might ask yourself after you have used the reading center for a while:

1. Can your students meet the objectives of this program with the activities you have planned?

2. What activities motivated your students the most?

3. What have you had to change from your original plans for the program?

IV. Materials and Resources

Refer to the NOW Program's Resource List for materials and resources that pertain to the career cluster you are taking up. The NOW Program also has access to audio-visual equipment that you might need: tape recorders, video-tape equipment, cameras, film, flashbulbs, projectors, and screens.

Construction Occupations

WORKERS WHO BUILD HOMES

grade 3

Developed by:

Geraldine Ricker

Grade 3 Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

WORKERS WHO BUILD HOMES can be integrated in many subject areas. Here, construction occupations are primarily applied to social studies, but math and language arts skills are also applied. This unit is also designed to help you add to the students' conceptual development of the world of work.

The focus of this unit is initially on the people who are involved in building the student's home. The student's awareness can then be expanded by dealing with other types of homes through history and throughout the world. Here, the relationship of environmental and cultural needs to the formation of domociles might be pointed out.

Karen McMahon
Activities Writer

Construction Occupations

WORKERS WHO BUILD HOMES

Developed by: Geraldine Ricker
Grade 3 Teacher

I. Objectives

A. General objectives

1. To make the student more aware of the many workers involved in the construction of homes.

2. To increase the student's awareness of various building materials.

3. To expand the student's awareness of some of the different types of homes in the world.

4. To attempt to instill in the student an appreciation and pride in their own homes.

5. To reinforce language arts, math, and social studies skills.

6. To introduce the following concepts about construction workers:

   a. An understanding and acceptance of self is important throughout life.

   b. Persons need to be recognized as having dignity and worth.

   c. Occupations exist for a purpose.

   d. Work means different things to different people.

   e. Education and work are interrelated.

   f. Individuals differ in their interests, abilities, attitudes and values.

B. Specific objectives

1. By the end of the unit activity the student will be able to name at least three workers in construction occupations.

2. The student will be able to state two duties, and the training/education requirements for each worker.

3. The student will be able to recognize and name seven different building materials, and he will be able to state a use for each.

4. The student will be able to recognize and name three different types of homes.

II. Activities

A. HAVE A DISCUSSION ABOUT HOMES. What are homes? Are they all alike? What is my home like? Why are homes different? Who build my home? Who are some of the people who built my home? What are some of the building materials in my home? What plans are made before a home is built?

B. ASK YOUR STUDENTS TO DRAW A PICTURE OF THEIR HOME.

C. INTRODUCE THE TYPES OF WORKERS THAT BUILT THEIR HOMES. Use pictures, drawings, and other occupational information that is available through the N.O.W. Program and your own resources. Some of the workers you might introduce are:

1. Architect
2. Contractor
3. Carpenter
4. Bricklayer
5. Electrician
6. Plumber
7. Roofer
8. Laborer
9. Foreman

Talk about these workers in relation to what they do when they are building homes for people. The bricklayer or mason has learned how to lay brick for chimneys, fireplaces, foundations, and sometimes for the exterior of houses. The contractor owns and runs the company who is responsible for the building of the house. The architect designs the house.

D. ASK THE STUDENTS TO BRING IN BUILDING MATERIALS.

Some of these materials might include:

1. Brick
2. Lumber (several different shapes, sizes, and types)
3. Paint
4. Glass
5. Shingles

6. Concrete
7. Pipe
8. Wire
9. Stone
10. Nails
11. Screws

E. HAVE THEM BRING IN SOME TOOLS THAT ARE USED IN BUILDING A HOUSE:

1. Hammer
2. Screw Driver
3. Saw
4. Rule
5. Level
6. Square
7. Trowel
8. Palate

F. HAVE THE STUDENT WRITE A SHORT PLAY ABOUT THE WORKERS WHO BUILD HOMES. Use the materials and tools from above as props. Have the students assume the roles of various workers until all have had an opportunity to participate. Let the students make their own costumes and,where necessary, tools and materials from your art supplies.

G. BRING IN SOME BLUEPRINTS, or HAVE THE STUDENTS GO HOME AND DEVELOP A FLOOR PLAN OF THEIR HOMES WITH THEIR PARENTS. Then,as a lesson in measurement for a math class,design a home that must fit into a specific area and has a specific number of rooms. Refer to the floor plans for help. This could be a role playing activity as an architect.

H. ASK A CONSTRUCTION WORKER TO COME INTO THE CLASS AND SPEAK ABOUT HIS JOB. Prepare the class to ask questions:

1. What do you do for work?
2. What is the title of your job?
3. What tools do you use?
4. What do you like and dislike about your job?
5. What kind of education and training have you had?
6. What are some of your outside interests?
7. Why are you proud of the work you do?

Ask some students to tape-record the resource person's talk. Ask other students to take pictures for slides or photographs. Ask other students to make a written documentation of this event. Use the slides, tapes, and write-up for a follow-up discussion.

I. WRITE A THANK-YOU LETTER TO THE RESOURCE PERSON.

J. DISCUSS DIFFERENT KINDS OF HOMES AROUND THE WORLD AND THROUGHOUT HISTORY. You might begin with a brief discussion about materials used by early man: branches, caves, mud, stones, leaves, and logs. Show pictures of different types of homes around the world. Ask the students to postulate on the materials used and how they think the house was built. You could then direct the discussion to how and why homes are different in different locations and climates. Why are homes different in hot countries? Cold countries? Wet countries? Dry countries? Ask them what kinds of workers do they think built these homes. Ask them what kind of home they would most like to build or live in. Ask them to draw a picture of this home.

K. DISPLAY MATERIALS, STUDENT WORKS AND RESOURCES, AT A LEARNING CENTER.

L. ASK THE STUDENTS TO GIVE AN ORAL OR WRITTEN REPORT ABOUT THREE FAVORITE CONSTRUCTION WORKERS. Ask them to relate two duties for each worker and the education/training requirements. Ask them also to tell why they like these workers. Ask the students to use the learning center for their research.

IV. Materials and Resources

A. The N.O.W. Program can supply any audio-visual equipment you might need like films, projectors, cameras, flash bulbs, video-tape equipment, etc.

B. You can order films from the University of Maine, Orono "Film Catalogue" through the N.O.W. Program:

1. "Upholstery Workers"

2. "Window Glass Workers"

3. "Building a House"

4. "The Paper Forest"

C. Materials and resources available through the NOW Program:

1. "Construction Occupations,"Calling Careers, video-tape

2. "Building a House," 98, filmstrip

3. "Construction Careers,"cassette

4. I Want to be a Carpenter, book

PERSONAL SERVICES OCCUPATIONS

Grade 3

Developed by:

Geraldine Ricker
Grade 3 Teacher

In Cooperation with
the N.O.W. Staff

INTRODUCTION

Third graders learn how to count change. This is a good time to show the student that school skills can become job skills particularly in the area of personal services occupations.

Personal services occupations have dignity and worth. This is the message for third graders in this learning package. Role playing exercises help reinforce this by giving the student the chance to find out that it is satisfying to do a personal service for someone else.

Community resources are also very helpful. These workers can be given the opportunity to explain their reasons for being a personal services worker.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

PERSONAL SERVICES OCCUPATIONS

I. Objectives

A. General objectives

1. To encourage the student to participate in individual and group activities.

2. To introduce the student to personal services occupations and skills.

3. To help the student understand the dignity of all kinds of work.

4. To show the student that schools skills can be job skills.

5. To help the student understand that money is often exchanged for personal services.

B. Specific objectives

1. By the end of the activity, the student will be able to recognize five personal services occupations.

2. The student will be able to demonstrate his ability to count change correctly when given at least a dollar's worth of (play) change.

3. The student will be able to perform at least one personal services worker skill of his choice.

4. The student will be able to match two tools with each of the five above occupations.

II. Activities

A. HELP YOUR STUDENTS READ POPEYE'S PERSONAL SERVICES OCCUPATIONS INDIVIDUALLY OR IN GROUPS.

B. MAKE A CAREER VOCABULARY LIST FROM THE OCCUPATIONS IN THE COMIC. Make definitions with the class by identifying the skills and tools of workers such as these:

1. Baker.

2. Shoe-shine person.

3. Manicurist.

4. Cosmetician.

5. Beautician.

6. Host.

7. Hostess.

8. Waiter.

9. Waitress.

10. Chauffeur.

11. Butler.

12. Maid.

13. Cook.

14. Housekeeper.

15. Gardener.

16. Seamstress.

17. Tailor.

18. Cobbler.

Ask your students to identify which workers are associated with each other. Separate the workers into groups. Identify the working environment for each group: barbershop and hairdressing, restaurant, home, shop, etc.

C. ASK YOUR STUDENTS TO DRAW THE WORKING ENVIRONMENT FOR EACH GROUP OF WORKERS. Display these with word charts and additional pictures of skills, tools, and personal services workers. Discuss the interrelationships of the workers within each group.

D. ASK A PERSONAL SERVICES WORKER TO BE A CAREER RESOURCE PERSON FOR YOUR CLASS. Prepare students to ask the resource person questions. Some of these might include:

1. What do you do for work?

2. How did you learn to do your job?

3. What other kinds of workers work with you?

4. What people require your services?

5. Do you like this kind of work? Why?

6. What is it about this work that you don't like?

7. How much money are your services worth? (How much do you charge?)

8. Why is your personal service important?

9. Is it dignified to offer a personal service to other people? Why or why not?

Write a thank-you note to the resource person. Ask the worker to wear what he wears to work and bring some of his tools, so he can make a demonstration for the students. They may want to participate in the demonstration.

E. TAKE AN EXCURSION TO A LOCAL PLACE OF BUSINESS THAT EMPLOYS PERSONAL SERVICES WORKERS. A laundromat, a shoe repair business, a health club, or a barbershop or beauty shop are good places to go. Students usually have had some orientation to these places, but they do not yet know the particulars of running such establishments. Prepare your students to ask questions much the same as with the resource person.

F. ASK YOUR STUDENTS TO BRING IN OR MAKE AS MANY ARTICLES AS THEY CAN THAT REPRESENT PERSONAL SERVICES OCCUPATIONS TOOLS. Display these tools. Some might include:

1. Shoe polish, shoe brushes, rags.

2. Combs, brushes, hairpins, rollers.

3. Make-up and facial preparations.

4. Fingernail clippers, file, cuticle trimmers.

5. Cloth, needles, thread, pins.

6. Serving trays, food, dishes, silverware.

7. Gardening tools.

G. USE THESE TOOLS IN ROLE PLAYING ACTIVITIES. Ask students to choose a personal services worker to role play. Some students may want to be customers. Collect play money. Have "customers" give the workers money in exchange for their services. Each "worker" should decide before he has customers how much his services are worth.

H. CONCLUDE AND REVIEW SUBJECT MATTER. Practice change counting exercises. Review personal services workers, their working environments, their skills, and their tools. Ask students to write about five of these workers, and their skills in tools.

III. Evaluation (Refer to Evaluation section in Activity Guide.)

IV. Materials and Resources

A. Popeye Comic: Personal Services Occupations.

B. Community resources.

C. Personal services tools. (Refer to II. Activities, F.)

Public Service Occupations

Environmental Control Occupations

WATER WORKERS

I

Grade 4

Developed by:

Lucille Allen

Grade 4 Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

This learning packet is intended to help students learn the properties of water, and the value that we must place on our water supply for survival. Without water workers an adequate and pure supply of water would not be available for our population. Therefore, this unit is also intended to help develop an understanding and appreciation for the workers who help supply us with our daily water needs.

Several subject areas can be utilized in this unit. Science, social science, and language arts activities are well integrated with career information.

This unit can also serve as an introduction to Our Life and Water which not only deals with water workers, but with environmental questions.

The NOW Program suggests that you use both of these units. Environmental education is an integral part of career education because workers to a great extent affect our environment for better or for worse.

Karen McMahon
Activities Writer

WATER WORKERS

Developed by Lucille Allen
Grade 4 Teacher

I. Objectives

A. General objectives

1. To introduce the students to the various workers involved with supplying us with water.
2. To help the students realize the following things about this kind of work:
    - a. Occupations exist for a purpose.
    - b. Individuals differ in their interests, abilities, attitudes, and values.
    - c. Various institutions influence the nature and structure of work.
    - d. Work means different things to different people.
3. To enable the students to discover that water is the most important liquid on earth.
4. To develop an understanding of the properties of water and means of purification.

B. Specific objectives

1. By the end of this unit study, the student will be able to name three kinds of workers who are involved in supplying our city with water.
2. The student will be able to state a job function for each of these workers.
3. The student will be able to discover two ways in which these workers help purify water.
4. The student will be able to isolate the four properties of water.
5. The student will be able to find five ways he uses water.
6. The student will be able to identify the three states of water.

II. Activities

A. TELL YOUR STUDENTS THAT THERE IS NO WATER AVAILABLE. No one can have a drink, go to the basement, or wash. In a discussion allow each student to develop at least five ways that they use water each day. In this respect, discuss why water is essential. Make a chart from the student responses of the ways we use water.

B. BRING IN A BUCKET OF WATER. Blindfold several students and have them smell, taste, and touch the water. Remove the blindfolds. Discuss the properties of water: clear, colorless, odorless, liqiud.

C. INTRODUCE SOLIDS, LIQUIDS, AND GASES. Boil water on a hot plate. Set up a fish bowl of water. Put some ice in a container. Discuss temperature. Let each student feel the hot gas, the room temperature water (liquid), and the cold ice (solid). Don't let them get too near the tea kettle. Use solid, liquid, gas, steam, ice, temperature, and water as vocabulary words. Draw pictures of the three states of water. Print the vocabulary words on the pictures. Hang them near the "Uses of Water" poster.

D. STUDY PURE AND IMPURE WATER WITH THE USE OF A MICROSOPE. A drop of drinking water on a slide and a drop of swamp water on a slide will illustrate your point. Let each student observe the pure and impure water. Let some students draw what they see and display the pictures. Other students may want to do some research about scientists (workers) who use microscopes. State of Maine workers test water for purity. Obtain special vials for testing water through the state department. Send in two samples of water. (The samples you looked at under the microscope.) Write a class letter to the department asking what kinds of workers work there, what they do, and a description of the test results of the samples.

E. ASK THE CITY WATER DEPARTMENT TO COME IN AND EXPLAIN THE WAYS THAT OUR WATER SYSTEM IS PURIFIED.

1. Chlorine

2. Aeration

Ask the resource person to relate the jobs involved in these processes.

F. PREPARE THE CLASS TO ASK THE RESOURCE PERSON QUESTIONS ABOUT HIS JOB. The following questions are suggestions. You may want to ask more.

1. What is your job?
2. What do you do?
3. What equipment and tools do you use?
4. What kind of education and training was necessary for you to do your job?
5. Why is your job important? What does your job mean to you?
6. Why is the water department located here?
7. What part does the city government play in the function of the water plant?

G. HAVE THE STUDENTS RESEARCH THREE OCCUPATIONS THAT INTERESTED THEM AT THE WATER DEPARTMENT OR AT THE STATE DEPARTMENT. Have them write letters and use the collected information to put together a career scrapbook about the workers' duties, wages, training requirements, and opportunities. Assemble this from pictures, drawings, letters and compositions.

1. Office personnel
2. Supervisors
3. Foreman
4. Water revenue inspector
5. Water service dispatcher
6. Meter installer
7. Meter repairman
8. Pipe layer
9. Water plant pump operator
10. Maintenance men
11. Micro-biologist, water analyst

H. SHOW FILMSTRIP AND RECORD "NATURAL RESOURCES" FROM THE N.O.W. SERIES. Complete the water display by incorporating slides, tapes, pictures, scrapbooks, and posters. (The N.O.W. Series is available through the N.O.W. Program at the Resource Center, Lewiston Comprehensive High School.)

I. MAKE SOME WATER ECOLOGY POSTERS.

IV. Materials and Resources

A. Materials - teakettle, hot plate, fish bowl, ice cubes, bowl, wall chart, blindfolds, paper cups, microscope, glass slides, pure water, impure water.

B. Resources - W.O.W. Kit: "Natural Resources", filmstrip and record. Write to the city water plant and the state department for additional information. Refer to the N.O.W. Program's Resource List under Agri-Business and Natural Resources Occupations for additional learning aides about water and workers.

C. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones
2. Video-tape equipment
3. Cameras, film, flash cubes
4. Projectors, screens

Public Service Occupations

Environmental Control Occupations

OUR LIFE AND WATER

II

Grade 4

Developed by:

Lucille Allen

Grade 4 Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

Use this unit as a continuation of the unit by the same author: Water Workers. The focus of that unit was on the properties and uses of water, and on the workers involved with our water supply. In this unit, the student may take a closer look at these workers. They may also take a closer look at themselves as interacting beings with their environment. Problem solving processes are emphasized concerning the student's ability to affect his environment for better or for worse.

The role playing activities in this unit pose real-life situations that may help your students grow to make decisions concerning work-life-environmental problems.

Karen McMahon
Activities Writer

Our Life and Water

Developed by Lucille Allen
Grade 4 Teacher

I. Objectives

A. General objectives

1. To show the relationships of workers to our needs for water.

2. To help the student become more aware of his environment.

3. To enable the student to realize his interdependence with his environment.

4. To help the student realize that he can make decisions which will affect his environment for better or worse.

B. Specific objectives

1. The student will be able to name five ways that life is dependent on water.

2. The student will be able to state three reasons why water is a limited natural resource.

3. The student will be able to state three workers who help provide us with our water needs.

4. The student will be able to describe a job duty for each of these workers, and the education and/or training requirements.

5. The student will be able to state one advantage and one disadvantage for each of these jobs.

II. Activities

A. MAKE A CLASS LIST OF THE WAYS WE USE WATER.

B. INTRODUCE THE CONCEPT THAT WATER IS NOT A LIMITLESS RESOURCE. Telling the class that there is no water in the school for drinking, washing or going to the basement. Ask the students what would happen if there was no more water.

C. ASK EACH STUDENT TO MEASURE THE WATER THAT THEIR FAMILY USES PER DAY. (drinking, baths, washing dishes, and flushing the toilet---flushing the toilet takes up to five gallons of fresh water.) Or have the class measure how much water they use in the classroom for one day for washing up, using the basement and drinking water, etc. Keep a daily tally for a week. Compare results. Change cups to quarts and gallons. Bring in quart, gallon and cup containers so that the students may observe the amounts. Ask them how they would feel if they had to measure every drop of water they used. Ask them if they felt they used less water by measuring it. Ask them if they realized just how much water they use. How many gallons of water does the classroom use in a week?

D. PREPARE YOUR CLASS TO TAKE A FIELD TRIP TO A LOCAL POWER DAM OR SEWERAGE TREATMENT PLANT. Prepare them to ask questions such as the following:

1. How much water is used here per day?
2. For what purposes is it used?
3. What kinds of workers work here?
4. What are some of the things they do?
5. What are the basic processes involved in the operation of this plant?
6. How do the various workers here relate to these processes?
7. How does the equipment and machinery relate to these processes?

Prepare the students by telling them that when they return they will have to give a report on three workers of their choice. They will have to report on their work duties, educational requirements, advantages, and disadvantages to the work, etc. They may find out this information by research or by asking questions of the workers at the plant on the career field trip.

E. ASSIGN STUDENTS VARIOUS RESPONSIBILITIES ON THE FIELD TRIP. Have some students make written accounts, some take pictures and some tape record. Have the students who will be responsible for recording pay particular attention to the worker and their duties, education, training, and job advantages and disadvantages so that this information may be used in the student reports. When you make arrangements with the water plant make sure you check out safety requirements.

F. WRITE THANK-YOU NOTES TO THE COMPANIES INVOLVED IN THE FIELD TRIPS. As a classroom activity, prepare a newspaper article relating what occurred and what was learned on the field trip in conjunction with previous classroom activity, and the career information involved.

G. ASK THEM TO RESEARCH THE THREE OCCUPATIONS THEY WERE ASKED TO THINK ABOUT. Provide information from field trip products your resources and appropriate career education resources from the N.O.W. Program's Resource List. Have the group write or give an oral report on these three workers noting duties, education/training requirements, and job advantages and disadvantages.

H. DISPLAY CARD 28 FROM THE S.R.A. LANGUAGE DEVELOPMENT PROGRAM. Have groups of students attend the center and write a short parapraph on what's happening in the picture about pollution.

I. HAVE OTHER STUDENTS WORK WITH S.R.A.'s FOCUS ON SELF STAGE III INVOLVEMENT. The filmstrip and cassette "Physical Environment" poses environmental problems to the student.

J. INTRODUCE THE PROGRAMMED LEARNING PACKAGE DISTRIBUTED BY THE COCA-COLA COMPANY CALLED MAN IN HIS ENVIRONMENT. Two activities in this program may be useful as closing activities to this unit. "Rescue in Space" will help reinforce the concept that we live in an environment of limited natural resources. "Make Your Own World" helps summarize man's interdependency with his environment.

IV. Materials and Resources

A. S.R.A. Kits:

1. Language Development Program, card 28.

2. Focus on Self, Stage III, Involvement, "Physical Environment."

B. Man and His Environment, "Rescue in Space," "Make Your Own World," available through your local Coca-Cola distributor.

C. Refer to the N.O.W. Program's Resource List for additional workers who help supply our water needs. Refer to Agri-Business and Natural Resources Occupations, Environmental Control Occupations, and Public Service Occupations.

D. The NOW Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones

2. Video-tape equipment

3. Cameras, films, flash cubes

4. Projectors, screens

Manufacturing Occupations

Agri-Business and Natural Resources Occupations

PULP INDUSTRIES

Developed by:

Edith Jordan
Grade 4 Teacher

In Cooperation with
the N.O.W. Staff

Introduction

A unit on papermaking and pulp industries is very pertinent for fourth graders in Lewiston. The pulp industry is a primary industry of our state, and traditionally fourth graders in Lewiston study Maine.

In this case, the NOW Program asks you to take a different point of view. Instead of highlighting your paper unit with the mechanical and chemical processes of papermaking, we ask you to highlight your unit with the workers involved in these processes, and also the relationship of this industry and its workers to the economic and environmental future of our state.

The problem solving approach to the activities that culminate this unit make these rather sophisticated concepts understandable to the fourth grade student. Care has been taken not to present a point of view, but to allow the student to make his own decisions when presented the facts.

Additional activities might include a paper recycling project.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Developed by:
Edith Jordan
Grade 4 Teacher

Pulp Industries

I. Objectives

A. General objectives

1. To introduce the student to the occupations related to pulp industries.

2. To help show the student the various rights and responsibilities of the workers discussed in this unit.

3. To increase the student's awareness of forestry and manufacturing processes that are beneficial to the environment as well as industry.

4. To introduce the student to the many products that we use that come from trees.

5. To introduce the student to the processes involved in papermaking from tree growing to paper marketing and distribution.

B. Specific objectives

1. By the end of the unit activity, the student will be able to name eight (8) jobs that relate to eight steps in papermaking from the forest ranger to the paper salesman.

2. The student will be able to state at least one job duty for each of these eight workers.

3. The student will be able to state the eight papermaking processes represented by these workers.

4. The student will be able to make a recommendation for a given representative group concerning a given environmental-pulp industry problem.

5. The student will be able to determine which products are made from trees and which are not given a list of fifteen products.

II. Activities

A. ASK YOUR STUDENTS WHAT THINGS THEY THINK ARE MADE OF TREES. Make a class list, and add to it as the unit progresses. You may want to start this unit after you discuss the different kinds of conifers in Maine, how they reproduce, and what they are used for.

B. SHOW THE FILM "THE PAPER FOREST." This film is available through the S.D. Warren Paper Company. Ask your students to make a list of the workers they saw on the film. Discuss the job roles of these workers in relation to the paper industry.

C. MAKE PLANS WITH THE CLASS FOR A MURAL DEPICTING THE WORKERS THEY LISTED. Show the workers involved with the processes of papermaking from the forest ranger to the paper salesman.

1. Forest ranger
2. Tree farmer
3. Logger
4. Workers in a paper mill:
    a. Washer
    b. Chipper
    c. Beater
    d. Drainer
    e. Dryer
    f. Ironer
    g. Roller
    h. Cutter
    i. Packager
5. Paper salesman-store-consumer

D. ASSIGN THE STUDENTS TO BRING IN VARIOUS ARTICLES SUCH AS THE FOLLOWING:

1. Records
2. Pens
3. Linoleum
4. Cellophane
5. Plastic articles
6. Dishes (synthetic)
7. Sponges (synthetic)
8. Rayon
9. Paint
10. Pres-to-logs
11. Leather articles
12. Cotton fiber articles
13. Metal articles
14. Glass articles
15. A rock or a piece of concrete

Display these articles. Ask the students to identify the things they think are made of wood. Afterwards, ask the class to isolate the various properties of the articles according to their similarities and differences. As a class, decide again which articles they think are made of wood according to these characteristics. Ask the class to think of as many occupations as they can that could have participated in the making, sales, and distribution of the product. Do not expect the students to give the technical names. They will probably feel most comfortable by describing the job according to the process involved.

E. GIVE THE STUDENTS VOCABULARY TERMS THAT PERTAIN TO PAPERMAKING. (Feel free to add to this short list.)

1. Lumber(ing)
2. Logging
3. Conifer
4. Washing (pulp)
5. Chipping "
6. Beating "
7. Draining "
8. Drying (pulp)
9. Ironing "
10. Linoleum
11. Cellophane
12. Rayon
13. Pulp

Make up a crossword puzzle using these words.

F. PROCURE PULP IN THE VARIOUS STAGES OF PAPERMAKING. A local paper company usually has samples available. If the samples are mixed, the students can make paper. This makes a good science experiment and role-playing exercise. Take this opportunity to review the processes and workers involved in papermaking.

G. ASK A FOREST MANAGER FROM A PAPER COMPANY OR FROM THE STATE DEPARTMENT TO COME INTO THE CLASS AND SPEAK. Discuss how it is important that forestry and manufacturing processes are as beneficial as possible to both the environment and industry. Prepare the class to ask the forest manager questions. Some of these questions might include:

1. Why is your job necessary?
2. What are some of the things that you do? What do you feel are your responsibilities?

3. What kinds of things are the paper companies doing to protect the environment? In the forests? In the mills?

4. Why do you like your work?

5. Are there state and federal laws concerning the use of forest land and industry pollution?

6. What are some of these laws?

7. Do you feel these laws help the paper companies to meet environmental standards?

8. What is your relationship to other paper workers who work in the forest? (What are some of these jobs? What do they do?)

9. What paper products do Maine paper mills produce?

10. Can Maine forests and mills keep up with the demand?

11. What measures can we take to limit our paper consumption? (Additional activities might include a paper recycling project.)

Write a thank-you note to the forest manager. Try to tape-record his visit. Have some students record what went on in writing.

H. POSE A HYPOTHETICAL ENVIRONMENTAL-PULP INDUSTRY PROBLEM TO GROUPS OF STUDENTS. Have each group represent a different faction. One group might represent the pulp industry. Another could represent environmentalists. A third group might represent the state government. A fourth group might represent concerned citizens, and another group might be pulp industry workers. Ask each group to make a recommendation concerning this problem. You might structure this activity something like this:

1. Give each student a sheet describing the problem. (Insert 1)

2. Ask the students to decide which group they will represent.

3. Ask the students to get together according to group.

4. Give each member of the group a paper telling them the group they represent and the particular needs of that representative group. Make room on the paper for each member to write down his recommendations. (Inserts 2&3)

5. Give the groups fifteen to twenty-five minutes to discuss the problem in terms of their needs.

6. Ask each group to choose a main speaker.

7. After the groups have had their discussion period, have the state government group come to the front of the room. Their main speaker can mediate the proceedings and ask each group leader to give their recommendations.

8. Give each group leader thirty seconds to a minute to give their recommendations.

9. After listening to all groups, the state government group makes their recommendations taking into consideration the previous recommendations and the needs of the State.

10. The class can then discuss the problem together.

INSERT 1

The Problem

A Maine paper company is laying-off workers because they cannot get enough fuel to run their plant on a full-time basis. To complicate the problem, the company is getting pressure from environmental groups to improve their waste disposal system. The air in the immediate area of the plant has a high sulpher content. The plant dumps all their wastes in a nearby river. What could be done to:

1. Give these workers jobs?
2. Solve the energy problem?
3. Help solve the waste problem?

You may choose from these alternatives or you may make-up your own:

1.__Start a new industry in the area.

2.__Use the river as an energy source.

3.__Put filters on the smoke stacks.

4.__Recycle the wastes and use the chemicals over again.

5.__Use solid wastes as land-fill.

6.__Everbody try to recycle paper.

What other things could be done?

Teacher's note: You may want to include a hypothetical map giving the location of the mill in relation to other businesses and buildings and to the physical environment.

INSERT 2

Representative Groups and Their Needs

Group 1: Pulp industry

Needs:
1. We must have enough pulpwood to make the paper that we need.
2. We must have good workers.
3. We must be able to run the mills five days a week to supply enough paper.
4. We need an abundant fuel supply to get the pulpwood and process it into paper.
5. We need a place to put our wastes.
6. We must not permanently harm our environment for our own protection and for the protection of others.

Group 2: Environmentalists

Needs:
1. Papermill wastes are ruining our rivers.
2. Lack of planning in lumber-cutting has left many acres bare. Erosion has taken place.

Group 3: Concerned citizens

Needs:
1. We depend on paper products.
2. We want to protect our environment.

Group 4: Pulp industry workers

Needs:
1. We must keep our jobs!

Group 5: State government

Needs:
1. We want to keep everyone as happy as possible.
2. Maine needs some industry.
3. Maine needs clean rivers and forests.

Student's Name:_________________________

INSERT 3

Group Member Information Sheet

ENVIRONMENTALIST

NEEDS:
1. Papermill wastes are ruining our rivers.
2. Lack of planning in timber-cutting has left many acres bare. Erosion has taken place.

Carefully read your problem sheet several times. Take into consideration your needs as an environmentalist. Make a recommendation that you think will best solve the problem. State why you think this is the best solution.

RECOMMENDATIONS:

Business and Office Occupations

WORKERS AT THE BANK

Grade 5

Developed by:
R. G. McCallum
Grade 5 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

Workers at the Bank can be very valuable to your students. They will not only learn what services the bank has to offer, but they will also learn about the career opportunities available in a bank.

This knowledge applies practically in the classroom when the students set-up their own bank and display their knowledge of bank workers' operations, and simple math skills such as addition, subtraction, and percentages.

It is not absolutely necessary for you to take the class to a bank. They could perhaps go to the bank with their parents and be asked to observe particular things about bank operations, or ask the bank workers questions.

Karen McMahon
Activities Writer

Workers at the Bank

Developed by R. G. McCallum
Grade 5 Teacher

I. Objectives

A. General objectives

1. To introduce the student to business and office occupations.
2. To introduce the student to the workers in the bank.
3. To introduce the student to the following concepts about these workers:
    - a. Their work and education are interrelated.
    - b. Their job specialization creates interdependency.
4. To introduce the student to the various functions of a bank: savings accounts, checking accounts, mortgage agreements, loans, and interest.
5. To give the student an opportunity to make a practical application of the following math skills: addition, subtraction, and percentage operations.
6. To give the student an opportunity to make a practical application of language arts skills.
7. To increase the student's awareness of the role of social interaction in business.

B. Specific objectives

1. The student will be able to choose two job positions available at a bank, one of which would be easy for him to perform, and one which would be difficult for him to perform.
2. The student will be able to state three reasons why they selected each of the jobs in 1. above.
3. The student will be able to name two job functions for each of the two above-mentioned positions, and will be able to state the education requirements for each.
4. The student will be able to describe two personal characteristics that are necessary for each of the above jobs.

5. The student will be able to perform one function of the job of his choice.

6. The student will be able to compute at least three math problems that a bank worker commonly faces.

7. The student will be able to describe the processes of opening up a checking account, a savings account, and applying for a bank loan.

II. Activities

A. HAVE A GENERAL CAREER ORIENTATION WITH YOUR STUDENTS. Discuss jobs that the students are familiar with: parents' jobs, friends' jobs, jobs they have heard about in the newspaper, on television, and on the radio, etc. Direct the discussion towards businesses that are common to your area: banks, insurance companies, etc. Choose the bank this time to be the highlight of your activities. Give out a short questionaire to find out what the students already know about banking.

B. HAVE THE CLASS WRITE A LETTER TO A LOCAL BANK. Ask whether the class can come and tour the bank, and ask the employees and manager how the bank is run, and what kinds of jobs are available.

C. HAVE THE CLASS DEVELOP MATERIALS, ARTICLES, AND RESOURCES ABOUT BANKING AND BUSINESS OCCUPATIONS. Some of the things you might try to procure are: cash register, an adding machine, ledgers, typewriters.

Have the students bring in some refrigerator boxes to make tellers' cages. Bring together paper supplies and masters for such things as model check books and accounts, and masters for model mortgage agreements, and loan applications. Break the class up into groups so that they may develop their own materials. Bring in samples of these things from local banks to use as models.

D. INTRODUCE THE OCCUPATIONS AT THE BANK BY USING "The Money Tree".(This is a multi-media kit put out by the Bowmar Company. It includes filmstrips, cassettes, and written learning aides, plus a teacher's manual.) Request this kit from the N.O.W. Program personnel in your school.

E. PREPARE YOUR STUDENTS FOR THE FIELD TRIP TO THE BANK. Break the class up into groups to document the visit. Some students might make written reports. Others might take pictures and tape record. If you want to video-tape the visit, the N.O.W. Program has the equipment. Prepare them to ask the workers at the bank questions about their jobs and the function of the bank:

1. What is the title of your job?

2. What are some of the things you do?

3. What education and training were required for your job?

4. What is your role at the bank in relation to the other workers?

5. What does a bank do?

F. INTRODUCE YOUR STUDENTS TO THE FOLLOWING BANK SERVICES: opening a savings account and checking account, making an application for a loan, making a savings deposit and withdrawal, keeping a checkbook, and an explanation of interest rates for savings and loans.

G. TOUR THE BANK, DOCUMENT THE VISIT WITH AUDIO-VISUAL EQUIPMENT. Make sure that your students are well organized and informed about what they should expect to see on the career field trip. Have the students not only question the manager and other workers about their jobs but also let them find out about the services and benefits that the bank provides. Pick-up any available leaflets and brochures for your bulletin boards.

H. HAVE YOUR STUDENTS WRITE A THANK-YOU LETTER TO THE BANK. Organize and display any information you have collected about the bank and its workers on table and bulletin board displays.

I. HAVE THE STUDENTS WRITE A COMPOSITION ABOUT TWO WORKERS AT THE BANK: one worker whose job would be easy for them to perform and one which would be very difficult. Ask them to give at least three reasons why they selected these jobs. Tell them to include at least two job duties for each of these workers in explaining their choices. Ask them to take the education and training requirements into consideration, too. Ask them to also consider at least two personal characteristics that are necessary for workers in these jobs.

J. GIVE THE STUDENTS ADDITION, SUBTRACTION, AND PERCENTAGE OPERATION PROBLEMS THAT A BANK WORKER COMMONLY FACES: adding up deposits, making withdrawals, calculating interest, cashing checks, and counting money, etc.

K. HAVE THE CLASS ORGANIZE AND DEVELOP A SIMPLIFIED BANKING OPERATION. Break the class up into workers at the bank and customers. Organize the equipment that was brought in earlier. Make the tellers' cages out of boxes and get ready for action. Some of the positions you might fill are:

President
Executive vice-president
Treasurer
Assistant treasurer
Manager
Head teller
Loan clerk
Bookkeeper
New accounts clerk
Tellers
Secretaries

Customers might be:

- Bond holders
- People requesting loans
- People opening checking and savings accounts
- Depositors withdrawals, etc.

Let the student have several trial runs with the machines and instruments they brought in. When the class feels more confident with the equipment, video-tape some of the best bank-customer transactions for permanent record. Give each student an opportunity to perform a function of his favorite bank worker in the model bank.

L. PASS OUT A QUESTIONAIRE SUCH AS THE FOLLOWING FOR A FOLLOW-UP ACTIVITY:

1. Describe what you would do if you wanted to open a savings account? A checking account?
2. What kind of information is asked on a loan application?
3. What are the differences between savings interest and loan interest?
4. What workers do you know of at a bank?
5. Name one thing that each does.
6. What did you like best about the unit activities?
7. Which one was most valuable to you?

IV. Materials and Resources

A. The N.O.W. Program has an extensive array of audio-visual equipment and materials that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorder, tape, microphones
2. Video-tape recording equipment
3. Cameras, film, flashbulbs

B. Materials available through the NOW Program:

1. Bank, book
2. "Business and Office Careers," cassette
3. Careers in a Bank, book
4. I Want to be a Bank Teller, book
5. "Office Occupations," filmstrip and record
6. "Office Workers," filmstrip
7. "The Money Tree," filmstrip - cassette

Environmental Control Occupations

Public Service Occupations

WEATHER WORKERS

Suggested for use in

Grade 5

Developed by:

Suzanne Cyr
Grade 5 Teacher

In Cooperation with the
NOW Staff

INTRODUCTION

The fifth grade student usually studies weather. This unit on Weather Workers not only introduces the student to the workers who are involved in predicting and measuring weather, it allows the student to experience and discover these processes himself. Two main career education goals are met:

1. The student is provided additional career education information which will broaden his knowledge of opportunities available to him.
2. The student is allowed to experience some job duties of workers in the form of role playing and the integration of work skills and school skills which will help him determine his interests and aptitudes as they apply to occupations.

A trip to the weather station can provide additional information and knowledge other than what can be found in the average classroom, but if a field trip is not possible, perhaps you can invite a weather worker to come into your classroom.

Karen McMahon
Activities Writer

WEATHER WORKERS

I. Objectives

A. General objectives

1. To enable the student to realize the advantages and disadvantages to a studied work role.

2. To introduce the student to the responsibilities involved in a given work role.

3. To help show the student that occupations exist for a purpose.

4. To enrich the student's understanding of weather related occupations.

5. To reinforce the math skills of subtraction, addition, and division by working with problems in relation to temperature differences at different locations, and temperature averages.

6. To give the student the added opportunity to use skills in locating information.

7. To give the student practice in map work.

B. Specific objectives

1. By the end of the unit activity the student will be able to name at least four careers related to weather and at least one job duty, one job advantage, one disadvantage, and the training and education requirements for each job.

2. The student will be able to state two reasons why each job exists.

3. The student will be able to compute temperature differences and averages.

4. The student will be able to recognize at least three weather instruments and explain their use.

II. Activities

A. HAVE THE STUDENTS LEAF THROUGH THEIR SCIENCE TEXT TO DISCOVER AS MANY WORKERS AS THEY CAN THAT DEAL WITH WEATHER.

B. MAKE A CLASS LIST FROM THESE CAREERS.

C. DISCUSS SOME OF THE ADVANTAGES AND DISADVANTAGES TO OCCUPATIONS THAT DEAL WITH THE WEATHER. (ex.: An airplane pilot flying for weather information must fly through hurricane storms.) The student should also note the responsibilities of each of the mentioned careers. (ex.: The airplane pilot must gather information about the weather sometimes to protect the lives and property of people.) In this way the student will get a better understanding of why these weather workers must perfomm these tasks. Introduce the class to any available occupational information about weather workers. (Refer to the N.O.W. Program's Resource List.)

D. TAKE YOUR STUDENTS ON A FIELD TRIP TO A WEATHER STATION. Make previous arrangements to have a guide explain what the various workers at the station do. Prepare your class for the career field trip by introducing them to various weather instruments and also the kinds of workers that they are likely to see. Have them prepare questions about the workers and equipment. Ask some students to write a report on what happened. Ask others to tape record and take pictures.

E. HAVE A RESOURCE PERSON WHO WORKS IN THE FIELD OF WEATHER COME INTO THE CLASS TO SPEAK ABOUT HIS JOB. Prepare the students to ask questions concerning salary, education, job satisfiers, advantages and disadvantages, and responsibilities of the work role. Ask him to introduce weather instruments and their uses.

F. HAVE THE STUDENTS COMPUTE SOME PROBLEMS CONCERNING LOCATION AND TEMPERATURE DIFFERENCES. ex.: What are the highest and lowest temperatures ever recorded in the United States? Where were these temperatures recorded? Locate these places on a map of the Unites States. This type of problem could also be used for individual states.

G. HAVE A LESSON IN COMPUTING AVERAGES BY USING TEMPERATURES. ex.: Recorded temperatures in Lewiston for September 2-9, 1973 are: 65 degrees, 63 degrees, 72 degrees, and 70 degrees. What is the average temperature?

H. ASK YOUR STUDENTS TO LISTEN TO A WEATHER REPORT. Have them use this type of information in making up a weather report of their own. This could be performed like a TV presentation, or it could be written or recorded.

I. ASK EACH STUDENT TO RESEARCH FOUR CAREERS OF THEIR CHOICE RELATED TO WEATHER. Give them the following criteria as requirements for their research:

1. State two reasons why they think the jobs exist.

2. State why these jobs were chosen for their research as related to:

   a. Job duties (including tools and instruments used)

   b. Job advantages

   c. Job disadvantages

   d. Training and education requirements

   Provide information obtained from resource person visits and/or field trips plus any additional information from NOW Resources for classroom research.

IV. Materials and Resources

A. Refer to your science text or Science in Our World by Schneider for grade 5.

B. Refer to the N.O.W. Program's Resource List for additional learning aides concerning weather workers.

   1. "Environmental Careers," cassette

   2. "Airplanes at Work,"126, filmstrip

   3. Careers in a Television Station, book

   4. Your Career in TV and Radio, book

C. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our "Resource Center" at Lewiston Comprehensive High School:

   1. Tape recorders, tapes, microphones

   2. Video-tape equipment

   3. Cameras, film, flash cutes

   4. Projectors, screens

Construction Occupations

Public Services Occupations

ELECTRICAL WORKERS AND ELECTRICITY

Grade 5

Developed by:

Suzanne Cyr

5th Grade Teacher

In Cooperation with the

N.O.W. Staff

Introduction

This unit is intended to help the student explore and discover what electricity is and how it happens. Occupational information relating to electrical careers in the power company and also the electrician and electrical serviceman are integrated in the activities. The unit is also designed to encourage discussion and questions concerning the environment and natural resources as they relate to today's problems. The students will have the opportunity to experiment, classify, observe, hypothesize, and interpret data.

The unit deals with a number of subject areas. This interdisciplinary approach gives science and occupational information wider applications in the areas of math, communications skills, and social studies. The students use math skills in reading electrical meters. Communications skills are needed in all activities. Social studies becomes part of a gaming activity where the students are asked to make their own solutions to energy problems.

Since these activities are student-oriented and involve group and individual efforts, I think that you will find that your students will participate enthusiastically.

Karen McMahon
Activities Writer

Developed by Suzanne Cyr
Grade 5 Teacher

ELECTRICAL WORKERS AND ELECTRICITY

I. Objectives

A. General objectives

1. To introduce the student to the many occupations related to electricity, and some of the factors relating to job choice.

2. To help the student discover what electricity is and how it happens.

3. To increase the student's awareness of environmental and natural resource problems that have resulted from our vast energy needs.

4. To encourage the student to formulate personal and societal solutions to these environmental and natural resource problems resulting from energy consumption.

B. Specific objectives

1. By the end of the unit activity, the student will be able to classify a given set of workers who have jobs in the field of electricity.

2. By the end of the unit activity the student will be able to construct a complete circuit within ten minutes given two pieces of insulated wire, a battery, a light bulb, and a switch.

3. By the end of the activity the student will be able to hypothesize in writing why and how the light went on when the above circuit was made.

4. By the end of the unit activity the student will be able to prescribe in writing three ways that we can conserve energy.

II. Activities

A. ASK YOUR STUDENTS TO MAKE A LIGHT WORK. Divide the class in groups and give each group two pieces of wire, a battery, a light bulb. Ask them to make a complete circuit given these articles.

B. HAVE EACH GROUP RELATE THEIR FINDINGS. Ask each member to hypothesize on paper how and why they think the light went on.

C. GIVE EACH GROUP A SWITCH. Ask them to connect the switch and make the light go off and on using the switch.

D. TAKE THE SAME EQUIPMENT YOURSELF. Ask the students to tell you what to do to make a complete circuit. Ask the students why it is necessary to do one thing before another. A class discussion could follow that goes over the findings of each group.

E. SHOW A VIDEO-TAPE CALLED "CALLING CAREERS: CONSTRUCTION OCCUPATIONS" (available through the N.O.W. Program). As an introduction you might say: "See what you can find out about electrical workers in relation to other workers. Write down what you find out." You might ask questions similar to the following:

1.) What other workers are necessary to build other than electrical workers?

2.) What are some of the differences and similarities between these jobs?

3.) What did you notice about electrical workers on the tape concerning their working conditions, training, tools, materials?

4.) What specifically was the electrician doing on the tape?

5.) Why do you suppose these men have chosen to work in this field?

6.) According to your observations, did the men and the women on the tape seem to enjoy their work? Why do you think they do or don't?

F. ASK AN ELECTRICIAN TO VISIT THE CLASS. Prepare the students to ask questions about job duties, functions, tools, skills, abilities, interests, and electricity. The electrician may give a short presentation followed by a demonstration of his tools and electrical meters. The students may want an opportunity to try and read the meter. Use the school fuse box as a visual aid to show that a complicated network of systems is required to provide a building with its electrical needs.

G. USE THE FOLLOWING AUDIO-VISUAL AID FROM THE W.O.W. SERIES: "Electrical Workers." This will introduce them to the workers involved in the power company. It will also show the processes involved in supplying us with electricity. Ask them questions relating to fuel such as:

1.) What kinds of fuel do we use in Maine at the power plants?

2.) Where does it come from?

3.) Will we have this fuel forever?

4.) Why not?

5.) What can we do about it?

H. TELL THE STUDENTS THAT THEY WILL CONSTRUCT A MODEL POWER PLANT. There is no wood for them to burn. There is no coal or oil. Make boxes, dowels, cardboard, paints, glue, and staples available. If the students need more direction, assign each group an energy source: sun, water, winds, nuclear power, or waste, for example.

I. HAVE EACH "POWER COMPANY" MAKE A WRITTEN PRESCRIPTION FOR THE PEOPLE WHO WILL USE THEIR ENERGY. This prescription will include at least three ways that people can conserve energy. Compare the prescriptions of each power company and discuss these solutions as a class.

IV. Materials and Resources

A. Materials

1. Insulated wire
2. Batteries
3. Flashlight bulbs
4. Switches
5. Cardboard boxes of various shapes
6. Dowels
7. Cardboard
8. Paints
9. Glue
10. Staples

B. Resources

1. Learning aids available through the NOW Program
    a. Calling Careers video-tape - "Construction Occupations"
    b. Wonderful World of Work Series - "The Electrical Workers"
2. Equipment
    a. Video-tape deck and monitor and camera
    b. Dukane sound record projector

Construction Occupations

Agri-Business and Natural Resources Occupations

JOBS AND ROCKS AND MINERALS

Grade 5

Developed by:

Suzanne Cyr
5th Grade Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

Jobs and Rocks and Minerals is a natural for Maine students since rocks and minerals are a valuable resource of this state. The availability of rocks and minerals also will help motivate your students since they may start their own rock collections and even visit a mineral mine in the area, if it is possible for you to make this type of arrangement in your school.

If you can't take a career field trip, you can no doubt find a rock hound who would be pleased to come into the class and talk about his hobby.

This unit also provides the student with the opportunity to engage in independent research and decision-making concerning the type of activities that will meet the unit objectives. This combined with pertinent occupational information gives this unit relevance in the area of career education for several reasons:

1. The student will have to learn to make decisions independently in life and in work situations.
2. Occupational information broadens the student's awareness of available work opportunities, and, therefore, helps the student make the best career decisions for him.

Karen McMahon
Activities Writer

JOBS AND ROCKS AND MINERALS

Developed by: Suzanne Cyr
Grade 5 Teacher

I. Objectives

A. General objectives

1. To help the student realize that occupations exist for a purpose.

2. To familiarize the student with occupations in geology.

3. To increase the student's awareness of rocks and minerals i.e., jobs, beauty, building materials, value.

4. To help reinforce school skills such as the following: math, language arts and social studies.

B. Specific objectives

1. By the end of the unit activity the student will be able to recognize the following jobs: geologist, construction worker, gemologist, sales personnel, and jewelers.

2. The student will be able to state the necessary education or training required to obtain a job in each of the above occupations.

3. The student will be able to name at least five different types of minerals.

4. The student will be able to describe each of the above minerals according to the following standards: 1. Where the mineral is usually found 2. color 3. shape (crystalline, layered) 4. two uses.

5. The student will be able to correlate five basic geometrical shapes with the process of cutting and making stones.

II. Activities

A. SHOW THE CLASS PICTURES OF PEOPLE WORKING WITH ROCKS AND MINERALS. Show pictures of stone houses and pictures of jewelry. (Slides are available of a mineral store and mine from the NOW Program.)

B. CONDUCT A DISCUSSION FROM THESE PICTURES. Discuss education, training, experience and possible job satisfactions.

C. TALK ABOUT THE VALUE OF ROCKS AND MINERALS. Use diamonds as an example. Discuss the difference between precious and semi-precious stones. Show pictures, slides, and transparencies of precious and semi-precious stones.

D. HAVE THE STUDENTS WRITE AN ACCOUNT OR INTERPRETATION OF THE CLASS DISCUSSION AND FILMSTRIP.

E. HAVE A GEOLOGIST OR ROCK COLLECTOR COME INTO THE CLASSROOM. He can speak about his hobby or occupations with rocks and minerals. Prepare the students to ask him questions. Take a video-tape, pictures, and recordings of the resource. person. Some questions might be:

1. Why do rocks and minerals interest you?

2. What kinds of rocks and minerals can you find around here?

3. What uses do they have?

4. What do you do with rocks and minerals?

5. What kinds of tools and implements do you use?

6. Are your rocks and minerals valuable?

F. CONDUCT A GEOMETRY CLASS USING BASIC GEOMETRIC SHAPES AS THEY RELATE TO STONE CUTTING. Show pictures of gems that utilize these shapes, or have a jeweler come in and show the basic cutting shapes for different kinds of gems.

G. POOL ALL OF THE PRODUCTS INTO A BIG DISPLAY. Use this (along with selected occupational information from the N.O.W. Program's resource file) as a learning center.

H. ALLOW THE STUDENTS TO GO TO THE CENTER IN SMALL GROUPS TO DO SELF-DIRECTED RESEARCH. Each student must be able to show at the end of his research that he can meet the specific objectives. Hand each student a sheet similiar to the following:

You will have three weeks to prove that you can do the following tasks. You may use your free time, and two periods a week will be assigned to you for using the "Rocks and Minerals Learning Center." All the information you need to complete these tasks is in the center.

1. You will be able to recognize the following jobs in the field of geology: geologist, construction worker, gemologist, sales personnel, jeweler.

2. You will be able to state the necessary training and/or education requirements to obtain a job in each of the above occupations.

3. You will be able to name at least five different types of minerals.

4. You will be able to describe each of the above minerals according to the following standards: 1. Where the mineral is found 2. color 3. shape 4. at least two uses.

I. GIVE THE STUDENTS A LIST OF ACTIVITIES THAT THEY CAN DO TO PERFORM THE ABOVE TASKS.

•1. Write a short report about each of the workers in 1. Give a brief description of what the job entails. Tell the basic education and training requirements needed to get a job in this field. Tell whether you would like to do the job or not, and why. (This activity fulfills tasks 1. and 2.)

and 2. Make mineral displays of at least five minerals. Label these minerals. Attach short reports about each mineral's characteristics. (This activity fulfills tasks 3. and 4.)

or 3. Write a story of a rock hunt you went on. (This could be imaginary.) In it, name and describe five minerals you found. Make sure the minerals you find come from the same approximate area. (Task 3. and 4.)

or 4. Keep an index file of all the rocks, minerals, and gems the class has discussed in this unit. Follow the standards in task 4. Transfer the information to a map of the U.S. (Tasks 3. and 4.)

5. Draw pictures of workers who use rocks and minerals on the job.

•All students must do this activity.

IV. Materials and Resources

A. Books

1. Science in Our World, Herman and Nina Schneider, Heath Science Series, Chapter 10.

2. I Want to Be a Coal Miner, book, available through the NOW Program.

B. Filmstrips: "Rocks and Minerals'; "A Very Special Stone."

C. Career Monograms: "Geology," available through the N.O.W. Program.

D. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorder, tapes, microphones.

2. Video-tape recording equipment.

3. Cameras, films, flash cubes.

4. Projectors, screens.

Environmental Control Occupations

Agri-Business and Natural Resources Occupations

CAREERS AND MAMMALS

Grade 5

Developed by:
Suzanne Cyr
Grade 5 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

Most students are curious about the natural world. This unit on animals (more specifically on mammals) not only provides the student with a way to classify the animal world, but it also introduces the student to the fact that workers can be classified according to certain job characteristics. If for nothing else, the unit is valuable in showing the student that classifying things is an organized method for learning more about a group of things.

This unit is not only task oriented, but it encourages the student to express and develop sensitivity to animals and their environment. You will probably find that they will be naturally motivated in discussing their feelings and knowledge.

Karen McMahon
Activities Writer

Environmental Control Occupations
Agri-Business and Natural Resources Occupations

Careers and Mammals

Developed by Suzanne Cyr
Grade 5 Teacher

I. Objectives

A. General objectives

1. To help the student realize that various groups and institutions influence the nature and structure of work.
2. To show that individuals differ in their interests, abilities, attitudes, and values.
3. To help the student realize general animal classifications.
4. To help the student become more familiar with the group of animals called mammals.
5. To reinforce skills in writing and role playing.
6. To encourage the student to develop sensitivity to animals and the environment.
7. To inform the student of workers who affect the animal world and environment for better or for worse.

B. Specific objectives

1. By the end of this unit activity the student will be able to name at least five jobs related to working with animals.
2. The student will be able to state four characteristics of the mammal group.
3. The student will be able to name one work role related to the protection and/or survival of mammals.
4. The student will be able to state one work role that deals with the slaughter or misuse of mammals.
5. The student will be able to state his own opinion that he has formed about mammals.

II. Activities

A. SHOW TRANSPARENCIES, PICTURES, OR LAMINATIONS OF DIFFERENT KINDS OF ANIMALS. Ask the students to pick out similarities and differences to classify the animals. Label them for name and animal group. Attractively display them.

B. EMPHASIZE THE MAMMAL GROUP'S CHARACTERISTICS. Talk about job opportunities with animals. Show pictures of workers and animals (mammals): zoologist, zookeeper, veterinarian, game warden, rancher, fur farmer, animal breeder, conservationist. Introduce the concept that people can harm animals. i.e., game poachers, fur poachers, people who are cruel to animals. Conduct a discussion about the animals' dependency on their environment, and man's affect on this environment for better or for worse.

C. COLLECT INFORMATION FROM MAGAZINES, YOUR RESOURCES, AND N.O.W. RESOURCES. Display pictures and information about animals and workers.

D. ARRANGE TO HAVE SPEAKERS COME IN WHO WORK WITH MAMMALS. Prepare your class for their visit. Instruct some students to take photographs and pictures, and somebody to video-tape. This equipment and material are available through the N.O.W. Program. Prepare the students to ask these workers questions such as the following:

1. What satisfaction do you get out of your work?

2. What kinds of animals do you usually work with?

3. What kind of training and education did you have to have?

4. What kinds of tools and implements do you use, if any?

5. How do your interests and abilities fit into your job?

6. What kind of other workers do you work with?

7. What salary range is your job?

8. What is the future outlook for your kind of work?

9. What are the advantages and disadvantages to your type of work?

E. REVIEW THE RESOURCE PERSON'S VISIT BY LOOKING AT THE CLASS-DOCUMENTED MATERIALS (pictures, slides, tapes, etc.). Have each student choose a career that interests him most of the ones discussed. (If too many students choose the same career, or some are undecided, try to aid them in a choice rather than assign them an occupation.

F. ASK THE STUDENTS TO DO CAREER RESEARCH ON AN OCCUPATION OF THEIR CHOICE. Students who are particularly interested in one occupation could listen to a cassette or read about a biologist, or vet., etc. They could report their findings to the class. The rest of the class could look up pertinent information on other careers, write their interpretation, and report it to the class.

G. HAVE STUDENT GROUPS WRITE A SHORT SKIT. Help them develop a skit utilizing careers associated with animals and their environment. They may use people that help animals and their environment and people who harm animals and their environment. Ask them to resolve a problem involving these two factions in their play.

IV. Materials and Resources

A. Materials available through the N.O.W. Program:

1. Books: I Want to be a Zookeeper, I Want to be an Animal Doctor

2. Monographs: Careers: Biological Science

3. Cassettes: "Veterinarian," "Biologist"

4. Refer to the N.O.W. Program's Resource List for additional learning aides about workers and animals.

B. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones

2. Video-tape recording equipment

3. Cameras, films, flashcubes

4. Projectors, screens

Agri-Business and Natural Resources Occupations

Marketing and Distribution Occupations

FLOWERS

Grade 5

Developed by:

Suzanne Cyr

Grade 5 Teacher

In Cooperation with the

N.O.W. Staff

INTRODUCTION

Life sciences are too often neglected in the elementary curriculum. Too often science is pushed into a corner with no correlation between its relationship to our world.

A knowledge of the basic life sciences is necessary for every student no matter what his future career plans may be, because our existences are solely dependent on the living things around us.

This unit on botany is an example of how a teacher can correlate science with careers and with other subject areas.

Units such as this one can be utilized throughout the school year to make the interdisciplinary approach to subject matter like science a total learning experience for your students.

Karen McMahon
Activities Writer

Agri-Business and Natural Resources Occupations
Marketing and Distribution Occupations

FLOWERS

Developed by Suzanne Cyr
Grade 5 Teacher

I. Objective

A. General objectives

1. To enable the student to realize that individuals differ in their interests, abilities, attitudes and values.

2. To familiarize the student with the field of botany and the workers in this field.

3. To help show the student the various rights and responsibilities of the workers discussed in this unit.

4. To instill a greater appreciation of flowers and their uses, and the beauty they provide.

5. To reinforce language arts and mathematics skills.

B. Specific objectives

1. The student will be able to describe three ways that jobs and flowers interrelate.

2. The student will be able to name five job opportunities available in the field of botany.

3. The student will be able to state three ways that flowers are valuable in the community.

4. The student will be able to correctly formulate two problems dealing with the distribution of seeds over a given area.

II. Activities

A. SHIFT THE EMPHASIS ON YOUR REGULAR BOTANY UNIT TO PEOPLE AND THEIR JOBS IN BOTANY.

B. COMPILE A CLASS LIST OF CAREERS IN BOTANY. Refer to the resource list for occupational information resources.

C. HAVE EACH STUDENT SELECT FIVE JOBS FROM THIS LIST THAT PARTICULARLY INTEREST HIM. Have the students procure the following information about each of these jobs:

1. Education and training

2. Experience necessary

3. 3 job duties

4. At least two tools or implements used (related to job duties)

5. Expected salary

6. Whether this job interests the student (why or why not?)

D. INVITE A BOTANIST TO COME AND SPEAK TO THE CLASS. Prepare the class to ask questions along the lines of the above questions. Ask him about his job satisfactions in the field of botany. Ask the class to write a thank-you note.

E. A FLORIST COULD BE INVITED TO SPEAK. Have the florist do a demonstration flower arrangement. Ask some students to record what the speaker said. Have some students take pictures, and some students write an account. You may even want to video-tape. (Available through N.O.W.) Ask the class to write a thank-you note.

F. THE CLASS COULD DO SOME FLOWER ARRANGING. Or the students could draw flower arrangements. Have each student find out the name of the flowers he uses. (You might use plastic flowers and let the students take turns making an arrangement on a styrofoam block.)

G. A GARDENER WOULD ALSO BE A GOOD CLASSROOM SPEAKER. Follow the same procedure as with other resource persons.

H. DO SOME MATH PROBLEMS WITH AREAS OF LAND AND SEEDS. For example:

> A package of seeds contains 100 seeds and covers an area of 100 square feet. If the package is 3/4 full, what is the area that could be covered with this partial packet of seeds?

I. DISPLAY ALL THE INFORMATION THE CLASS HAS GATHERED. Use it as a research center.

J. GIVE THE STUDENTS THE FOLLOWING RESEARCH TO COMPLETE:

1. You will be able to discover three ways that flowers are valuable to the community.

2. You will be able to describe three ways that flowers and jobs interrelate.

Along with these objectives give them the following list of activities to choose from to meet these objectives:

1. Write a short skit about three customers who come into a florist shop. They each ask for flowers for a different purpose.

2. Go to a local florist shop and conduct an interview with the owner on a tape recorder. Ask the owner questions like this: "What are the different reasons that people come in to buy flowers in your shop?" "What kinds of jobs can you get in a florist shop-greenhouse?"

3. Make out an order to a catalogue seed company. Ask for three different types of flowers for different purposes in your garden. Write a short paragraph telling why you selected these types.

4. Make a drawing of three different jobs that deal with flowers.

5. Make a collage or drawing showing three different ways that flowers might be used.

6. Make three different flower arrangements. Give one to your teacher. Give one to your family. Give one to a friend.

7. With a classmate role-play the florist shop owner and customers. Do this on the telephone. Have three different requests. Make an order to the shop owner.

   You may chose any of these activities just as long as you choose enough activities to complete both tasks. You must report to me on the activities you choose.

IV. Resources and Materials

A. Career Monographs: Botany is available through the N.O.W. Program.

B. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorder, tape, and microphones
2. Video-tape recording equipment
3. Cameras, film, and flash cubes
4. Projectors and screens

Hospitality and Recreation Occupations

SHORT ORDER COOK

Grade 6

Developed by:

Richard Campbell
Grade 6 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION

This unit on the short order cook can serve as an introduction to other occupations in the food services. You may want to follow an activity or activities from this unit with information about waitresses, chefs,kitchen managers, and kitchen aides, for example. You may even want to set up a model restaurant where members of the class get the opportunity to act out the duties and skills required of food services occupations. The needs of your classroom individuals will determine the extent to which you articulate activities. There is a great variety of things you can do (from planning menus to preparing a meal), and the NOW Program is very anxious to hear from you concerning the activities you plan to implement.

Karen McMahon
Activities Writer

Developed by Richard Campbell
Grade 6 teacher

Hospitality and Recreation Occupations

Short Order Cook

I. Objectives

A. General objectives

1. To help the student recognize the skills and abilities required to be a short order cook.

2. To give the student an opportunity to participate in classroom activities that involve the utilization of some of the above skills and abilities and selected school subject skills in the areas of math and language arts.

3. To give the student a better understanding of the training requirements of a short order cook.

4. To enable the student to realize that:

   a. Occupations exist for a purpose.

   b. There is a wide variety of careers that may be classified in several ways.

   c. Education and work are interrelated.

   d. Occupational supply and demand has an impact on career planning.

   e. Job specialization creates interdependency.

   f. Various groups and institutions influence the nature and structure of work.

   g. Individuals can learn to perform adequately in a variety of occupations.

   h. Work means different things to different people.

B. Specific objectives

1. The student will be able to name two advantages and two disadvantages of being a short order cook.

2. The student will be able to use the math skills of addition, subtraction, multiplication and division in computing a model payroll for three short order cooks given wages/hour and hours worked.

3. The student will be able to communicate his ability to speak on the telephone on a professional basis concerning wholesale food purchasing by:

   a. Introducing himself, and his purpose for calling.

   b. Concisely asking for the information he needs.

   c. Repeating this information to assure accurateness.

   d. Copying this information down on paper.

   e. Thanking the party for contributing the desired information.

4. The student will be able to utilize the information he obtained from 3. in computing the total price of the product for a given number of people on a given day.

II. Activities

A. ASK THE CLASS TO TALK ABOUT COOKS THAT THEY KNOW. Discuss the cook's abilities, duties, wages and interests. Take a closer look at the duties, skills, and abilities required for a short order cook. Students and teachers can do this by using the S.R.A. W.O.R.Kit and the S.R.A. Occ. Exploration Kit. You may place these materials on an overhead projector, or make a temporary bulletin board with these occupational materials and any other information you or the students may be able to bring in. When talking to the students about the abilities, skills, and duties of a short order cook, take into consideration the career education concepts introduced in objective 4., a.-h. For example, you might introduce the concept and ask the students to make the connection in the form of a class discussion. Refer to the general objective 4., e.: Job specialization creates interdependency. You might ask "How does the short order cook depend on other workers?" or "How do other workers depend on the short order cook?" This brings us to another important point: "Occupations exist for a purpose."

You might relate to the student's own interest by discussing the concept that work means different things to different people. Also, many people work as a short order cook only on a part-time basis, and hold very different full-time jobs i.e., "Individuals can learn to perform adequately in a variety of occupations."

B. HAVE THE STUDENTS WRITE TWO ADVANTAGES AND TWO DISADVANTAGES OF A JOB AS A SHORT ORDER COOK AFTER THE DISCUSSION.

C. ASK YOUR STUDENTS TO MAKE A PAYROLL FOR THREE COOKS. Give information such as the following:

1. Cook 1 works 40 hours a week and he earns 2.25/hr.
2. Cook 2 works 48 hours/week at two dollars an hour.
3. Cook 3 works 52 hours/week at $3.13/hour.

Provide your students with social security and tax scales. Here you might discuss how experience (education) and pay are interrelated in this occupation. (Refer to general objective 4., c.)

D. TELL THE STUDENT TO CALL A LOCAL MEAT DISTRIBUTER FOR THE PRICE OF HAMBURGER AND RIB EYE STEAK FOR THAT DAY. He will conduct his conversation according to the specific objectives 3., a-e. Procedure: The restaurant will need 70 lbs. of each to feed two sixth grade classes and their parents. How much will it cost the restaurant to order the meat? How much is the cost per person considering that there will be 150 people there? How much should the restaurant charge per plate if four people will work two hours each at $2.50/hour to prepare and serve the meal, and it cost the restaurant twenty additional dollars for extras, and the restaurant wanted to make a ten percent profit? (Computing all parts of this problem may be too complicated for some of your students. You might present it by parts, and give credit only for what is completed and not take away credit for parts that are not completed.)

E. CONCLUDE THE ACTIVITIES. Ask each student to answer the following:

1. Name three duties of a short order cook.
2. Name three skills that a short order cook must have.
3. What is the job outlook for short order cooks?
4. What kind of education and/or training is necessary to become a short order cook?
5. What are some of the working conditions for a short order cook?
    a. Hours:
    b. Pay:
    c. Benefits:
    d. Working environment:
    e. Expected productivity:
6. Why or why not would you like to be a short order cook?

IV. Materials and Resources

A. Periodicals you can send for:

1. "Hospitality Magazines," South Wabash Ave., Chicago, Illinois 60603.

2. "Institution Magazines," 1801 South Prairie Ave., Chicago, Illinois.

3. "Volume Feeding Magazines," 205 E. 42nd St., New York, N.Y. 10022.

B. Places to write to:

1. The Restaurant Assoc.
New York Ave.
New York, N.Y.

2. Hotel and Restaurant Employees and Bartenders
International Union
6 East Fourth St.
Cincinnati, Ohio 45202.

C. The NOW Program has an extensive array of audio visual materials and equipment that is available at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones.

2. Video-tape equipment.

3. Cameras, film, flash cubes.

4. Projectors and screens.

D. Classroom materials available through the NOW Program:

1. "Hospitality and Recreation Careers," cassette.

2. Hotel, book.

3. I Want to be a Restaurant Owner, book.

4. I Want to be a Waitress, book.

Construction Occupations

STRUCTURES

Grade 6

Developed by:
Ray LeClair
Grade 6 Teacher

In Cooperation with the
N.O.W. Staff

INTRODUCTION TO STRUCTURES

Structures is recommended to be used with children in grade 6. In this unit the students use various materials to build many different kinds of structures. It may be used with individual students, in small groups, or as a total class activity. Some of the common materials used are: clay, straws, common pins, thread, toothpicks, washers, pipe cleaners, uncooked spaghetti, and gumdrops. Many other materials are as useful to keep around if they happen to be available.

In STRUCTURES the student's own creativity is the prime motivating factor. Therefore, it is suggested that the teacher does not direct the student's handling of the given materials. It is the thinking process involved in making the structure rather than the structure itself that is important here. The teacher should only present the materials and not instruct the student on how to solve the given problem.

Occupational information about construction careers can give added meaning and interest to these activities. The total tie-in of structural concepts and careers can really motivate students in the suggested grade level. If you don't structure these activities too much, STRUCTURES will be successful in your classroom. The excitement of the experiment may make your classroom the noisiest on the floor, but you can be assured that STRUCTURES is a very constructive learning activity.

Karen McMahon
Activities Writer

Construction Occupations

Structures

By Ray LeClaire
Grade 6 Teacher

I. Objectives

A. General objectives

1. To introduce the student to the various occupations and their function in the construction field.

2. To introduce the student to the concept of structure.

3. To develop an understanding of the natural forces of gravity and balance.

4. To develop an understanding of the physical characteristics of various materials and their limitations for use in structures. (strength, durability, weight, texture, pliability, etc.)

5. To enable the student to understand the importance of planning.

6. To introduce the student to the following concepts about workers:

   a. Education and work are interrelated.

   b. Occupations exist for a purpose.

   c. Individuals differ in their interests, abilities, attitudes, and values.

   d. Job specialization creates interdependency.

B. Specific objectives

1. The student will be able to name five construction occupations.

2. The student will be able to state five tasks of a construction worker of his choice.

3. The student will be able to state the education and training requirements for the worker of his choice.

4. The student will be able to relate his own interests, abilities, attitudes, and values to the worker of his choice.
5. The student will be able to build structures with the following materials: clay, straws, pins, tape, wood, toothpicks, paper tubes, and index cards.

XI. Activities

A. INTRODUCE YOUR STUDENTS TO THE CONCEPT OF STRUCTURE. Point out various aspects of the school building, furniture, and natural objects such as bushes and trees. Discuss the role of gravity and balance in the make-up of these structures. Discuss the physical characteristics of the various materials in these structures. (pliability, strength, durability, weight, texture, etc.)

B. PROVIDE CLAY FOR YOUR CLASS. Ask them to build such familiar objects as bridges, towers, and trees. After they have built the structures, ask each student why he built this particular structure given clay as a material. Ask them to relate the various physical characteristics of clay. You may want to take pictures of some of the structures.

C. SHOW PICTURES OF CONSTRUCTION WORKERS. Refer to the N.O.W. Program's Resource List under Construction Occupations and General Occupational Information for various resources concerning these workers and workers in general. Make appropriate information available to your students on display tables and bulletin boards.

D. TAKE THE CLASS ON A CAREER FIELD TRIP TO A LOCAL CONSTRUCTION SITE. Document the field trip with pictures, written accounts, and tape recordings. Prepare your class for workers at the construction site:

1. What are some of the materials used in this structure?

2. Why were they used? (What properties do they have that make them appropriate for this structure?)

3. Who designed this structure?

4. Who specified the materials that went into this structure?

5. What jobs are necessary to insure the construction of this structure? (What are some of the things they do?)

6. How do these different jobs depend on each other for the completion of the structure?

7. What are the education/training requirements for these occupations?

E. WRITE THANK-YOU NOTES TO THE CONSTRUCTION COMPANY. Relate the important information the class found out.

F. BUILD STRUCTURES WITH STRAWS, PINS, AND TAPE TO SHOW STRENGTH, STABILITY, DURABILITY, WEIGHT FACTORS, PLIABILITY, AND TEXTURE. Take pictures of the structures, or otherwise document the improvement,if any, of the students' abilities to make a structure according to the standards that you specify.

G. ASK THE STUDENTS TO DO INDIVIDUAL RESEARCH ON THE CONSTRUCTION WORKER OF THEIR CHOICE. Ask each to prepare a final oral or written report on the construction worker of his choice paying particular attention to:

1. Five tasks or job performances of the construction worker of his choice. (Giving his job relationship to the completion of two specified structures.)

2. The education/training requirements for the worker of his choice.

3. The student's own interests, abilities, attitudes, and values concerning this worker.

H. BUILD A STRUCTURE FROM UNCOOKED SPAGHETTI AND TAPE. (DO not use thin spaghetti. It breaks too easily!) After the class has built their sturctures, ask each student why they built their particular structures given the materials uncooked spaghetti and tape. Ask them to relate the physical characteristics of these materials to their structure. Compare student responses and structure results with activities B. and F.

I. BUILD STRUCTURES TO SUPPORT A MAXIMUM WEIGHT FROM PAPER TUBES, INDEX CARDS AND TAPE.

J. BUILD STRUCTURES TO SUPPORT WEIGHT, USING SUCH MATERIALS AS TOOTHPICKS, SMALL PIECES OF WOOD, TAPE, AND PINS.

K. GIVE FINAL REPORTS ON WORKERS. Ask the students to give their reflections on the structures project.

IV. Materials and Resources

A. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our Resource Center at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones
2. Video-tape recording equipment
3. Cameras, film, flash bulbs
4. Projectors, screens

B. Resources

1. "Building a House," filmstrip
2. Construction Careers, book
3. I Want to be an Architect, book
4. I Want to be a Carpenter, book
5. I Want to be a Roadbuilder, book
6. "Roadbuilders at Work," filmstrip
7. "The Nation's Builders," Bowmar Kit, filmstrip-cassette

MARINE SCIENCE OCCUPATIONS

Suggested for use in grade 6

Developed by:

Grace Trainor
Grade six teacher

In cooperation with
the N.O.W. Staff

INTRODUCTION

Studying marine science occupations gives you the opportunity to integrate subject areas. Science will be your most useful subject in designing marine biology projects and in discussing environmental questions. Language arts comes into the picture when students must use communications skills when dealing with classroom speakers.

When you discuss the role of marine science occupations in society, you will be dealing with the social sciences.

You could even bring in some math by giving your students some time-distance-speed problems using knots instead of miles per hour.

Feel free to add subject matter oriented activities such as these to this unit. We encourage you to personalize this unit to meet the needs of your classroom.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Marine Science Occupations

I. Objectives

A. General objectives

1. To introduce the student to marine science occupations.

2. To help show the student that marine science occupations exist for a purpose, i.e. they enable us to use marine resources, and they provide information concerning the ecology of our planet.

3. To introduce the student to the responsibilities involved in a given work role in marine science.

4. To enable the student to realize the advantages and disadvantages of a studied work role.

5. To allow the student to discover some of the resources that the ocean can provide.

6. To help the student develop language arts skills in letter writing, listening, speaking, and asking questions.

B. Specific objectives

1. By the end of the following activities the student will be able to name six marine science workers.

2. The student will be able to name one job function for each of these workers.

3. The student will be able to name one advantage and one disadvantage for each of these work roles.

4. The student will be able to select the marine science resource that each of the six workers primarily works with and describe its function as related to each work role.

II. Activities

A. INTRODUCE MARINE SCIENCE USING YOUR SCIENCE PROGRAM AND CLASS DISCUSSION. Discuss the relationship between marine resources and the subsequent growth of marine science occupations. Here are some questions you might ask to help direct your discussion:

1. How many resources can you think of that exist in the sea? (Make a class list)

2. Go down the list and ask for each: What uses are there for this resource?

3. Then ask for each: What future uses can you think of for this resource?

4. Why is it important that we realize the uses for these resources?

5. What effect can our use of these resources have on our environment? (Ask for each resource.)

6. With the help of the class introduce the marine science occupations that deal with each of these resources. Discuss each worker's job function, his relationship to the resource, his responsibilities to that resource, and job advantages and disadvantages. Make a bulletin board with all the information gathered that shows the relationships of workers to resources.

B. FIND OUT MORE ABOUT MARINE SCIENCE OCCUPATIONS BY WRITING TO THE UNIVERSITY OF MAINE PUBLIC RELATIONS DEPARTMENT. Help the class develop the letter so that they ask for specific information about particular workers.

C. HAVE SMALL GROUPS OF STUDENTS MAKE BULLETIN BOARD DISPLAYS OF OCEANOGRAPHIC SCENES. Change scenes weekly.

D. HAVE A SCUBA DIVER COME INTO THE CLASSROOM DRESSED IN HIS GEAR. You might arrange for him to come in during a class discussion about divers and their jobs. Ask him to explain what his equipment is for, and what he does. Discuss the various roles of the diver in relation to the resources of the sea. Some divers dive to get fresh scallops and fish; some do under water recovery of lost items. Some salvage abondoned-lost items; some repair under water equipment, ships, structures, or buildings. Have the class write a thank-you note to this resource person. Ask them to relate the things they gained from the visit about his occupation and marine science.

E. CHOOSE FROM THE FOLLOWING RESOURCES FOR ADDITIONAL OCCUPATIONAL INFORMATION:

1. A marine biology teacher--before the speaker comes in, introduce your students to the field of marine biology through books and films. Students may want to make their own marine biology displays. A classroom activity might include dissecting a simple shellfish such as a clam.

2. A Coast Guard or Navy representative may discuss the role of the sea in jobs, and discuss employment opportunities. Students may bring in ship models to make displays.

Prepare your students for the speaker and excursions by asking them to write down their questions. Questions might be about job functions, opportunities, training/education requirements, skills, abilities, salary, responsibilities to workers, to other people, and the environment. Write thank-you notes to each speaker.

F. ASK EACH STUDENT TO PREPARE AN ORAL SUMMARY OF SIX MARINE SCIENCE OCCUPATIONS. Ask them to describe the job function of each worker, an advantage and a disadvantage, and the resources the job deals with.

G. GIVE MINI-ASSIGNMENTS TO INTERESTED STUDENTS ON LAKES, SWAMPS, AND PONDS. Have these students give their reports to the class.

H. DISCUSS THE ROLE OF WATERFOWL IN THE WATER ECOSYSTEM. A visit to a waterfowl museum, or the Maine Audobon Society may provide additional information.

I. REVIEW THE INFORMATION GATHERED DURING THE ACTIVITIES.

III. Evaluation (Refer to Evaluation section in Activity Guide.)

IV. Materials and Resources

A. Popeye Comic: Marine Science Occupations.

B. Career Monographs.

C. SRA-Career Information Kit.

D. Maine Audobon Society.

VTR USE
Mini-Courses

Developed by: Vincent Wills
N.O.W. Program

CONCEPTS: Although there is no direct connection with this mini-course and subject matter for fifth and sixth graders, VTR Use can serve as a useful vehicle for more generalized school skills like: hand, eye, and mind coordination, and following directions. This course may also motivate students who potentially have interest in communications and media occupations to explore their individual direction in this area.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To be aware of the various occupations in the communications and media field that deal with the technical aspects of filming and recording. 2. To be aware of the basic skills and training requirements for selected careers in video and recording. 3. To give the student an opportunity to do some taping and playing back with the VTR System. 4. To encourage the student to follow directions in setting up and taking down the VTR System. 5. To encourage group and individual efforts.	1. An introduction to the various elements in a VTR System with an emphasis on function and methods: a. An actual illustration by the instructor on the components and their use. b. Hands-on practice activity by the students. 2. Take the students on a field trip to a local TV station. 3. Ask your students to draw parallels between the occupations at the TV station and the required roles to successfully tape a VTR program. 4. Give each student an opportunity to set-up, tape, play back, and dismantle the VTR System.	1. The student will become aware of some jobs, training, requirements, and skills related to video tape recording. 2. The student will set up the VTR System. 3. The student will tape a portion or all of a play, program, or TV commercial. 4. The student will play back his program. 5. The student will dismantle the VTR System.	1. A complete VTR System: a. Camera b. Deck c. Tapes d. Monitor television (These materials are available through the N.O.W. Program.) 2. Selected material for taping: a. Play b. Students write their own programs or commercials. 3. A field trip to a local TV Station to observe: a. Camera man b. Audio specialist c. Producer d. Director e. Mechanical technician

STUDENT CHECKLIST

VTR USE

1. Did the student work as a team member?

2. VTR use

   a. Did the student successfully assemble the VTR system? (explain

poor	fair	good	excellent
1	2	3	4

   b. Did the student tape a program, play segment, or commercial? (Did he meet your criteria for a good taping?)

AUDIO -	poor	fair	good	excellent
	1	2	3	4

VISUAL CLARITY -	poor	fair	good	excellent
	1		3	4

FOCUS ON PROPER SUBJECT -	poor	fair	good	excellent
	1	2	3	4

   c. Did the student go through the necessary steps of monitor hook-up etc. to successfully play back his tape?

poor	fair	good	excellent
1	2	3	4

   d. Did the student dismantle and store the VTR properly?

poor	fair	good	excellent
1	2	3	4

3. What occupational information did this student gain from his participation in "VTR Use?"*

   a. occupations: ________________ ________________ ________________

   b. skills: ________________ ________________ ________________

   c. training: ________________ ________________ ________________

   *You may want each student to fill out a questionaire relating to occupations, skills, and training.

4. Comments:

PLAY PRODUCTION

Developed by: Doria St. Hilaire

This course was developed in conjunction with another mini-course: VTR Use. The actors observed their performances. The play participants also improvised their own costumes and made the play setting. The play used was called "The King Who Hated Birthdays" by Jane Foster Thornton. It was from the March 1973 issue of the Drama Magazine for Young People. The play was selected for its brevity and easy readability.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS & RESOURCES
1. To give the student an opportunity to learn to express himself orally in front of a group. 2. To introduce the student to the performing arts, and the various occupations and roles involved in play production. 3. To give the student an opportunity to utilize reading and memory skills. 4. To give the student an opportunity to utilize his creative talents in design and expression. 5. To stress the interdependence of the people who work together on a play.	1. Introduce your play choice to the course participants: a. Tell them something about who wrote the play. b. Tell them something about each character. c. Tell them about the play itself. d. Ask for volunteers to try out for each part. e. Determine who is most suitable for each part. 2. Read the play together. 3. Work on scenery. 4. Make costumes. 5. Have rehearsals. 6. Video-tape so that actors may determine their strengths and weakness.	1. Each participant will have contributed to the full production of a play in the following areas: a. Development design, and/or construction of play scenery. b. The memorization and performance of his part in the play. c. The development and construction of his own costume. d. The self-analysis of his performance in the play after viewing the video-tape of his performance.	1. A short and easily read play with enough characters for everybody. 2. A room or stage where stage scenery and costumes will not be disturbed for the course duration. 3. Materials: a. Boxes. b. Scissors. c. Crayons. d. Paints. e. Chairs and tables. 4. Hand-me-down clothes. 5. Video-tape equipment. 6. Persons who can run video-tape equipment.

PLAY PRODUCTION

Student Checklist

Student's Name:________________________________

1. Did the student cooperate in developing, designing, and/or constructing scenery for the play?

2. Did the student know his part in the play?

3. How would you rate the student's efforts in representing his part in the play?

poor	fair	good	excellent
1	2	3	4

4. Did the student work well in a group as well as individually?

5. Did the student put together his costume for the play?

6. Did the student make a thorough analysis of his performance in the play after viewing the video-tape? (What was this analysis?)

7. Comments:

WOODWORKING

Developed by: Robert Ducharme

Woodworking can be a valuable learning experience by providing a more palatable and relevant way for 5th and 6th graders to improve reading, math, and motor coordination skills. Occupational information gives added impetus to the impact of this course by showing that these "school skills" can become job skills.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To be aware of the various occupations related to woodworking. 2. To be aware of the basic skills and training requirements for occupations in woodworking. 3. To use and care for basic hand and measurement tools. 4. To plan and read working drawings before starting a project. 5. To encourage group and individual efforts.	1. An introduction to tool use and occupational information: a. Demonstration and hands-on activity. b. A resource person to speak to participants about his occupation in the woodworking field. c. A field trip to a business where woodworking is done. 2. Students choose their projects. (Instructor also works on a project for demonstration purposes.) Examples: a. Birdhouse b. Footstool c. Small and simple toys 3. Students work at their own speed and competency to complete project per objectives 3,4, and 5.	1. The student will become aware of jobs, training requirements and skills re- related to woodworking. 2. The student will start and finish a woodworking project of his choice per objectives 3,4, and 5.	1. Tools: a. Hammer b. Rule c. Square d. Hand saw e. Drill f. Sandpaper g. Plane h. Vise i. Paint brush 2. Wood 3. Nails and screws 4. Resource persons in woodworking related occupations. 5. A field trip to a cabinetmaking, woodmaking, or furniture making concern. 6. Suggested book for instructional materials reference: Carpentry for Children, Leavitt, Jerome E. Dingley Library 784.08

Student's Name: ______________________________

WOODWORKING

Student Checklist

1. Did the student work as team member?

2. Use and care of tools:

	Use	Care
a. Hammer		
b. Rule		
c. Square		
d. Hand saw		
e. Drill		
f. Sandpaper		
g. Plane		
h. Vise		
i. Paint brush		

3. Respect for others and their property:

4. End product:

   a. Completed:
   b. Incomplete:

5. Behavior

   a. Improved
   b. Same
   c. Worse

6. Comments:

GLASS STAINING

Developed by: James Gondek

Primarily this course is designed to help students use their leisure time wisely. The materials used are easily obtained. Glass can often be donated. The special paints and the liquid lead can be purchased at a local hobby center. Since the paints and liquid lead are a considerable investment, the teacher may well encourage the students to use their materials wisely and to plan ahead what they want to do on a working drawing. A frugal use of materials and the ability to plan ahead are valuable in the working world.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To involve the student in constructive leisure-time activity. 2. To introduce the student to the idea that constructive leisure-time activity can develop into a full time economic-occupational venture. 3. To encourage the student to plan ahead. 4. To encourage the student to use materials conservatively. 5. To give the student a sense of accomplishment by completing his project.	1. Introduce the materials used and give a simple demonstration on their use. 2. Allow the students to plan their project on a working drawing. 3. Encourage them to use materials conservatively by pointing out the importance of planning ahead.	1. The student designs and completes a glass staining project in a four week period given one class period each week for this activity.	1. Panes of glass. 2. Liquid lead. 3. Glass paints. 4. Fine and coarse brushes. 5. Paint thinner. 6. Drawing paper. 7. Colored pencils, crayons or felt-tipped markers.

STUDENT CHECKLIST

GLASS STAINING

Name:__________________________________

1. Did the student show respect for others and their property.

2. Behavior:

   a. improved b. same c. worse

3. Did the student plan ahead?

4. Did the student use materials conservatively?

5. End product: (What was the product?)

   a. completed:

   b. incomplete:

6. Comments:

CANDLEMAKING

Developed by: James Gondek

Primarily this course is designed to help students use their leisure time wisely. Mathematical skills are needed, however. Students must measure correctly and determine temperature levels and differences in order to make a candle that will burn properly. After the initial instruction on candlemaking procedure, students were encouraged to follow their own creative spirits in constructing candles of all sizes, shapes, colors, and types.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To involve the student in constructive leisure-time activity. 2. To encourage group and individual efforts. 3. To reinforce the math skills of measurement and determining temperature. 4. To introduce the student to the idea that constructive leisure-time activity can develop into a full-time occupational-economic venture.	1. Introduce the students to the various materials used in candlemaking: a. wax e. dyes b. wicks f. scents c. conditioners g. molds d. polishes 2. Demonstrate the steps in making a candle by making a simple candle: a. Melt wax (discuss safe and unsafe ways of melting wax.) b. Add conditioners, dyes, and scents. (Discuss measurement.) c. Secure wick in mold. d. Pour wax in mold. (Discuss safety.) 2. Allow the students to plan their projects. 3. Visit a craft store or have someone who makes candles for a living talk to the class. 4. Allow remaining time for project completion.	1. Each student will complete at least one condle in the four class sessions. Some of these products might include: sand candles, water candles, and candles of various shapes from molds such as detergent bottles.	1. Wax (80# for $20.00) 2. Wicks 3. Conditioners 4. Polishes 5. Scents 6. Dyes (Crayons work OK) 7. Sand 8. Salad oil for water candles 9. Eye dropper, measuring cups 10. Candy thermometers 11. Heating units 12. Double boilers 13. Molds (Plastic containers of all sizes and shapes) 14. As a reference you might want to procure a candlemaking instruction book from a local hobby center. 15. Make contacts with a person who makes candles for money to come into the class and speak. Prepare your students to ask questions about this person's work role.

STUDENT CHECKLIST

CANDLEMAKING

Name:__________________________________

1. Did the student work well individually as well as part of a team?

2. Did he show respect for others and their property?

3. Behavior:

    a. improved b. same c. worse

4. End products: (What was the project?)

    a. completed: b. incomplete:

5. Did the student observe safety procedures in handling melted wax and in melting wax?

6. Comments:

MODEL CONSTRUCTION

Developed by: Roland Hachey

Model construction, a common leisure time activity for 5th and 6th grade boys, can easily extend into the realm of education. To read and follow directions, to encourage group and individual efforts, to visualize parts into a whole, to improve motor coordination, and to explore occupations and means of transportation make this course valuable to the student who is motivated by model construction.

OBJECTIVES	ACTIVITIES	OUTCOMES	RESOURCES AND MATERIALS
1. To read and follow directions included in a model kit and/or to plan and follow original instruction plans. 2. To encourage group and individual efforts. 3. To assemble and complete a model kit and/or to create and complete an original model. To introduce and explore briefly, occupations connected with the use, management, or construction of the vehicles represented by the models.	1. Instructor presents various model kits and miscellaneous model parts dealing with transportation. 2. Students select a model kit, or they may make plans for the construction of an original "transportation" model. 3. Instructor talks about: a. Transportation occupations based on student selections of model construction. b. Why and how transportation systems are important. 4. A field trip to a business that deals with the use, management, or construction of transportation vehicles. 5. A resource person in the transportation occupations area. 6. Students work at their own speed and competency to complete projects.	1. The student will become aware of selected jobs and basic skill and training requirements related to the use, management, and construction of transportation vehicles. 2. The student will start and finish a model-making project per objectives 1.-4. (Also, see Student Checklist on following page.)	1. Materials: a. Plastic glue b. X-acto knives c. Misc. plastic model making material 2. Model kits: a. Boats b. Cars c. Airplanes 3. Resources: a. A resource person involved in the use, management, or construction of transportation vehicles b. A field trip to a concern that deals with the use, management, or construction of transportation vehicles.

MODEL CONSTRUCTION

Name________________________________

1. Did the student work as a team member? (Respect for others and their property?)

2. Did the student carry out and complete his original project plans? (What was the project?)

3. Behavior:

   a. improved   b. same   c. worse

4. Comments

LEATHERCRAFTS

Developed by: Raymond LeClaire

This mini-course can provide students with the motivation to use their leisure time constructively. Preplanning and organization are emphasized to encourage the students not to waste materials. It might well be noted that preplanning, organization, and a frugal handling of materials and resources are much respected by most employers. It is, therefore, evident that constructive leisure time activities such as leathercrafts can contribute to the student's total adjustment to his life role and work role.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To improve the manual dexterity of students who already show ability in this area. (Students with poor manual dexterity should be discouraged from taking this mini-course since sharp implements are used on the leather.) 2. To enable the student to engage in constructive leisure time activity. 3. To introduce the student to some occupations that deal with leather. 4. To give the student a sense of accomplishment in a simple task that he has organized and planned himself.	1. Show film: "Earning a Living by Leathercrafts." 2. Bring in various materials for leather crafts. (Refer to Material & Resources.) a. Introduce these materials. b. Allow them to engage in hands-on experience materials. 3. Show them several projects that they may get involved in. (Refer to resource list for suggested references.) 4. Have them choose their project, plan the amount and types of materials and implements they will use. 5. Take them to a business that deals with leather.	1. The student will make a relationship between leathercrafts and ways of making a living with leather. 2. The student will plan and organize his materials and implements in order to complete a leathercrafts project. 3. The student will become exposed to at least one occupation that deals with the processing or manufacturing of leather products.	1. Scrap leather from the local shoe industry. 2. X-acto knives. 3. Punches. 4. Leather glue. 5. Lacing. 6. Plastic gimp. 7. Suggested projects: a. Change purse. b. Pencil-pen holders. c. Headbands. d. Chokers. e. Knife cases. f. Braided gimp objects. 8. A resource person and/or field trip dealing with the leather industry. 9. Instruction books about simple leather crafts and gimp braiding: a. Knotting and Braiding with Pyro-Lace. (Gordon's Hobby House) b. Creative Leathercraft, Grete Peterson. Available at the H.S. Library 745.53 P.44.

Student's Name________________________________

LEATHERCRAFTS

STUDENT CHECKLIST

1. What was the student's project?

2. Did he complete the project?

3. Did the student waste materials?

4. How would you rate the student's organization and planning for his project?

poor	fair	good	excellent
1	2	3	4

5. How would you rate the student's behavior in the classroom?

poor	fair	good	excellent
1	2	3	4

6. Was the student willing to share his tools and materials?

7. Was he willing to help other students in the course?

8. What tools and materials did the student use? Did the student use them effectively?

Comments:

SEWING

Developed by: Doria St. Hilaire

Although sewing is a very constructive leisure time activity, it can also be a very valuable vocational skill not only in the world of work but in the home. It also has value in school situations. Math skills are needed in measurement; reading skills are needed in reading and interpreting patterns. Following directions and organizing materials are also useful in work, school, and home situations.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To encourage the student to use reading skills in reading sewing pattern directions.	1. Display and explain briefly the materials and equipment that the students will be using.	1. Each student will demonstrate his ability to do base running and blanket stitches in making random quilt patterns.	1. One sewing machine for every two students. (This course may be taught without a sewing machine.)
2. To encourage students to plan ahead.	2. Teach hand sewing of base, running, and blanket stitches by making random patterned quilting projects with the class.	2. Each student will be instructed on the use and safety procedures of the sewing machine.	2. Colored thread.
3. To encourage the student to organize materials.	3. Make cross and embroidery stitch samplers along with with the students.	3. Each student will make a cross stitch and embroidery stitch sampler.	3. Needles and pins.
4. To utilize the math skills of measurement and number recognition.	4. Instruct them on the use, and care of the sewing machine by demonstration and hands-on experience.	4. Each student will complete a sewing project using his choice of or combination of the above skills.	4. Scissors for each student.
5. To help develop fine and gross motor skills.	5. Have the students make simple projects like: pocketbooks, pillow cases, and curtains.		5. Linen.
6. To introduce the student to occupations that utilize sewing skills.	6. Show them ways to use iron-on tape for appliques.		6. Embroidery thread.
7. To involve the student in constructive leisure-time activity.	7. Have a tailor and/or seamstress talk to the class about their occupation.		7. Embroidery hoops.
8. To introduce the student to hand, machine, and decorative stiching.	8. Give individual help to students until their projects are completed.		8. Cloth scraps and yard or more remnants.
			9. Iron-on tape for appliques.
			10. Ironing board.
			11. A tailor and/or seamstress to talk to the class.
			12. Pencil and paper for pattern making.

STUDENT CHECKLIST

SEWING

Name: ______________________________

1. Did the student show respect for others and their property?

2. Behavior:

   a. improved   b. same   c. worse

3. The student learned to do the following stitches:

   a. base ___
   b. running___
   c. blanket ___
   d. embroidery ___ (please specify)
   e. cross ___

4. Did the student complete the project? (What specifically was the project? What stitches were involved? Did the student use appliques and/or embroidery?)

5. Comments:

Knitting and Crocheting   Developed by Joanne Snell

The purpose of this mini-course is primarily to provide constructive leisure time activity. Reading and following directions, developing fine and gross motor skills, and counting make the course valuable to school and work-life situations.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To help the student develop fine and and gross motor skills. 2. To encourage the student to read and follow directions. 3. To give the student a sense of accomplishment by completing a planned project. 4. To introduce the student to a constructive leisure time activity that can develop into a full time economic-occupational venture. 5. To encourage peer-group interaction.	1. Show the students some samples of some simple & useful objects that can be made by knitting and crocheting. 2. Take the students to a craft boutique where they can see that people can use knitting & crocheting not only as a hobby but as a money making project. 3. Demonstrate how to knit & perl. 4. Demonstrate how to do chain stitch, single, double, and triple crochet. 5. Allow the students to practice combinations of the above. Give individual attention where necessary. Use a mirror for instructing left-handed students. 6. Show those who are crocheting how to do a granny square.	1. Each student will have completed a simple knitting or crocheting project such as a headband or a granny square pot holder.	1. Large knitting needles (8-9) and crochet hooks. 2. Beginning crochet and knitting books. 3. 10-15 students per class. 4. Previous arrangements for a career field trip to a craft boutique. 5. Yarn scraps and skeins of yarn for more motivated students.

STUDENT CHECKLIST

KNITTING AND CROCKETING

Student's Name:__________________________________

1. Did the student show respect for others and their property?

2. Behavior:

   a. improved   b. same   c. worse

3. Did the student complete the project? (What was the project?)

4. The student learned to do the following stitches:

   a. knit ___
   b. perl ___
   c. chain___
   d. single crochet ___
   e. double crochet ___
   f. triple crochet ___

5. Comments:

CHESS

Developed by: Richard McCallum

Although chess is not directly related to any school subject for fifth and sixth graders (except mathematics), chess can improve the following skills: organization, logic, and concentration. This all adds up to a constructive development of the mind outside of an academic situation, and the improvement of basic skills that are essential to success in school and in turn to success in the working world.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To improve hand-eye coordination, organization, logic, and concentration. 2. To illustrate mathematical relationships in terms of strategy on the chess board. 3. To involve the student in constructive leisure time activity. 4. To encourage individual as well as collective efforts. (Games involving identification of chess pieces, moves and strategies.)	1. Introduce the basic chess moves: a. Lecture. b. Hands-on experience. c. Posters illustrating each move. 2. Reinforce moves and strategies: a. Play chess games: 1.) Stencils picturing moves. Students identify piece, move & strategy. 2.) Teacher sets up a board with a particular strategy. Student & partner must try & get out of the situation. 3.) Students play a game of chess with themselves. 4.) Students play chess with other course participants. b. Conduct chess tournaments within the school & with other schools.	1. The student will know the moves and placement of each piece in a chess game. 2. The student will recognize mathematical relationships between the moves of the various pieces & possible associated strategies. 3. The student will complete a chess game with himself. 4. The student will complete a chess game with another course participant 5. If your course allows the time, the student will complete at least one game of chess as a participant in a school or interschool chess tournament.	1. A quiet room that allows participants to engage in the game without distraction and crowding. 2. Chess boards and pieces for every two participants. 3. Enough instructors for participants to get individual attention (Probably about one instructor for every fifteen students) 4. A chess instruction book for reference: Drueke's Chess Primer, WMF Drueke, Pub. by WMF Drueke Inc. This book is available at Gordan's Hobby House, 19 Park Street. 5. Refer to student checklist.

CHESS

STUDENT CHECKLIST

1. Did the student participate as an individual as well as a group member?

poor	fair	good	excellent
1	2	3	4

2. Did the student exhibit a noticeable improvement (according to his individual abilities) in hand-eye coordination, organization, logic, and concentration? Explain:

3. Did the student make the appropriate moves for each piece?

Pawn__________ Bishop__________

Castle__________ Queen__________

Knight__________ King__________

4. Did the student meet OUTCOMES 1.-5.?

1 2 3 4

5. Was the student's behavior:

improved? the same? worse? different?

6. Comments:

CARD GAMES: CRIBBAGE-WHIST-BRIDGE

Developed by Henry Hall

Card games such as cribbage, whist, and bridge are one way to use leisure-time constructively. They can give the student an opportunity to use mathematical relationships for fun. Card games is a way for friends to get together. Card games can also sharpen the student's awareness of possible consequences that may result from his decision to play a certain combination of cards. Each card game was introduced in a four week period.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To improve hand-eye coordination, organization, concentration and logic. 2. To provide the student with decision-making opportunities. 3. To give the student an opportunity to function as an individual as well as a team member. 4. To involve the student in constructive leisure time activity. 5. To give the student the opportunity to use math in an enjoyable and constructive manner. 6. To encourage the student to think ahead.	1. Initially give the students an opportunity to get used to handling cards by allowing them to shuffle, deal, and hold the cards in a fan. 2. Introduce the rules of the game. Show some possible card combinations on an overhead projector. 3. Have the students practice the combination by playing some games open handed. 4. Give the students individual attention on holding and organizing their cards. 5. Point out mathematical combinations (pairs, runs, combo's, etc.) 6. Give the students an opportunity to play the games in groups. 7. Evaluate them according to their ability to play the game by the rules.	1. The student will demonstrate his knowledge of the rules and procedures of cribbage, whist, and/or bridge by participating in the game(s) and playing to completion.	1. Cribbage boards and pegs. 2. Cards. 3. Tally sheets and pencils. 4. Overhead. 5. Transparencies with common card combinations for cribbage, whist, and bridge. 6. Hoyle's Book of Games for teacher and student reference.

Student's Name:______________________________

Mini-Course:____
(cribbage-whist-bridge)

Student Checklist

1. Did the student participate individually as well as with a group?

poor	fair	good	excellent
1	2	3	4

2. Did the student exhibit a noticeable improvement (according to his individual abilities) in hand-eye coordination, organization, logic, and concentration? Explain:

3. Did the student have a grasp of the rules of the game?

poor	fair	good	excellent
1	2	3	4

4. Was the student's behavior:

improved ? the same? worse? different?

5. Comments:

COMMERCIAL ART

Developed by: Maurice Locke
Commercial Artists
Locke Signs

Drawing can be a valuable skill. It can help develop perspective, and coordinate the mind with the hand. This course can give the student a different point of view for looking at the natural world since the instructor applies the initial drawing of basic forms such as cylinders cubes, spheres, and pyramids to the forms of natural and made-made objects. Mr. Locke also related art skills to the world of work.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To introduce the student to the drawing of three dimensional objects such as: cylinders, cubes, pyramids, spheres, and rectangular solids. 2. To encourage the student to apply the above basic shapes to the forms of natural and man-made objects. 3. To encourage the student to become more confident in expressing himself by drawing. 4. To enable the student to coordinate the mind with the eye and with the hand. 5. To help the student develop a sense of visual perspective. 6. To introduce the student to the various occupations that utilize art skills.	1. Prepare drawings of basic three dimensional shapes, and display or draw the shapes on a blackboard to illustrate methods and forms. 2. Ask the students to draw the same forms. Give them individual help. 3. Introduce and discuss as a class the occupations that require artistic skill. 4. As they become more confident with the basic forms help the students materialize these forms into natural and man-made objects. 5. After the fourth week ask each student to draw the basic forms again. Compare these results with initial results.	1. Each student will demonstrate how to draw the following basic forms: cylinder, cone, pyramid, cube, rectangular solid, and sphere. 2. Each student will, by means of drawing, draw natural and/or man-made objects using the above solids as a basis.	1. Three dimensional basic solids models. (wood or cardboard) 2. Drawings of these three dimensional solids. 3. Drawing pencils. (soft lead) 4. Drawing paper. 5. The opportunity to observe natural and man-made objects that reflect the basic solid shapes. 6. Occupational information about careers that use art skills. (Refer to the NOW Program's Resource List)

STUDENT CHECKLIST
COMMERCIAL ART

Student's Name: ______________________________

1. Did the student show respect for others and their property?

2. Behavior:

   a. improved? b. same? c. worse?

3. The student drew the following basic forms:

   a. Cylinder ___
   b. Cone ___
   c. Pyramid ___
   d. Cube ___
   e. Rectangular solid ___
   f. Sphere ___

4. The student used the basic forms below to draw:

   a. Cylinder:
   b. Cone:
   c. Pyramid:
   d. Cube:
   e. Rectangular solid:
   f. Sphere:

5. My overall evaluation of the student's progress in depicting the solids (by comparsion of first week and fourth week drawings) is:

poor	fair	good	excellent
1	2	3	4

6. Comments:

TUTOR CORPS

Developed by: Richard Bernier

This mini-course gives students a first hand experience at teaching. Tutors were allowed to choose their subject and grade level. A number of things can be gained from this experience. The student may find ways to relate to his peers better. The tutoring situation also provides the student with the incentive to help others, and it particularly helps them with their own study skills since they must prepare a lesson for their tutee.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS AND RESOURCES
1. To give the student the opportunity to relate to his peers. 2. To encourage the student's incentive for helping others. 3. To help improve the tutor's study skills by giving him the opportunity to prepare lessons for his tutee. 4. To introduce the student to the teaching profession.	1. Start the program by having a discussion about the teaching profession. Ask the students their impressions of what a teacher does. 2. Inform them that they will tutor a student on a grade level and subject matter of their choice. Have each student write a contract for his desired tutoring program. 3. Make appropriate arrangements with the teachers in the school for your tutors. 4. Provide textbooks and materials that are needed. 5. Ask tutors to submit a teaching plan for their tutoring program. 6. Individually advise tutors.	1. Each tutor will have tutored a student on a grade level and subject matter of his choice for a contract period of two hours for four weeks.	1. Textbooks, workbooks and school supplies.

STUDENT CHECKLIST

NAME: ______________________________

MINI-COURSE: Tutor Corps

1. Did the student submit a contract?

2. Did he follow out his contract plans?

3. Did the student show incentive in helping others?

4. Has the student showed increased interest in the teaching profession as a result of this activity?

5. Did the student return borrowed textbooks and supplies?

6. Was the regular classroom teacher of the tutee pleased with the performance of the tutor with her student?

7. Did the regular classroom teacher notice any changes in the tutee's performance in classroom work?

CAREER FIELD TRIPS

Developed by: Raymond LeClaire

CONCEPTS: This activity is most closely related to the social studies curriculum. The intent is to show the students a wide variety of occupations that do not require special skills or intense training that exist in our community. This exposure should help widen social concepts on the fifth and sixth grade levels. It may show how society depends on workers to function. It can also make them aware of the wide variety of opportunities that will be available to them as young adults.

OBJECTIVES	ACTIVITIES	OUTCOMES	MATERIALS & RESOURCES
1. To expose the student to a wide variety of careers. 2. To enable the student to examine his own interests, abilities, aptitutes, and values in relation to these careers. 3. To show the interdependent relationships of society and workers. (Examine 2., a.-e. in a field trip follow-up by showing slides or pictures of workers taken on the field trips.)	1. Take the students on a variety of career field trips. 2. Ask students to observe workers they see on their field trips: a. Worker roles. b. Tools, machines, and implements. c. Worker's relationship to other workers. d. The worker's role in relation to society's function. e. The student's interests, abilities, aptitudes, and values in relation to selected work roles. 3. Have the student's make lists of all the workers they can think of who contributed to the business.	1. The student will become aware of selected worker relationships in an interdependent society. 2. The student will examine his own interests, abilities, aptitudes, and values in relation to selected occupations. 3. The student will become more aware of selected work roles, skills, and duties.	1. A list of cooperative business establishments for proposed field trips. 2. Arrangements for transportation. 3. Student permission slips. 4. Film, flashbulbs, and camera. 5. Projector and screen. 6. Organization and planning prior to the course to make the proper arrangements with the business establishments for the career field trips.

Student's Name:______________________________

CAREER FIELD TRIPS

STUDENT CHECKLIST

1. The student returned approved permission slips for the career field trips in which he participated:

   yes no

2. According to my own guidelines and expectations the student observed and reported on his observations about these career field trips according to the criteria in ACTIVITIES 2., 1.-3. to the best of his ability:

	poor	fair	good	excellent
2.a.	1	2	3	4
2.b.	1	2	3	4
2.c.	1	2	3	4
2.d.	1	2	3	4
2.e.	1	2	3	4

3. Was the student cooperative?

4. How would you evaluate the student's behavior in class and on the field trips? (Please explain your choice.)

poor	fair	good	excellent
1	2	3	4

5. Comments:

ART IN CAREER EDUCATION

Grades K-3

Developed by:

Elaine Cannan

Elementary Art Teacher

In Cooperation with the

N.O.W. Staff

*Suggested for use in conjunction with career education activities by regular classroom teachers and art teachers.

INTRODUCTION

Art in Career Education is primarily intended for the elementary art teacher, but it can also help the regular classroom teacher who wishes to supplement and reinforce career education activities with art.

This package covers four grade levels. The activities suggested for these grade levels coincide with other career education learning packages that have already been developed. A list of packages is available at your request.

The NOW Program welcomes your suggestions for additional career education art activities.

Karen McMahon
Activities Writer

ART IN CAREER EDUCATION

Developed by Elaine Cannan
Elementary Art
Teacher

I. Objectives

A. General objectives

1. To integrate art into other existing curriculum areas by emphasizing career education applications in these areas.

2. To help develop the student's hand-eye coordination skills.

3. To develop the student's abilities to use art tools in expressing his ideas and feelings.

4. To familiarize the student with the basic art concepts of color, shape, and line.

B. Specific objectives

1. Kindergarten

   The student will be able to illustrate tools, objects, clothing, workers, buildings, and machinery that are appropriate to a given unit of instruction in the kindergarten curriculum.

2. First grade

   a. The student will be able to illustrate his choice of profession by completing an "I wish I were..." portrait.

   b. The student will be able to illustrate his impressions of a story about a given worker.

3. Second grade

   a. The student will be able to construct a hat representing a worker of his choice.

   b. The student will be able to . construct a doll house, store, clubhouse, business office or other appropriate building that represents a group of workers currently being taken up in the classroom.

4. Third grade

   a. The student will be able to design and draw a floor plan of his own home.

b. The student will be able to help design and illustrate a wall mural depicting buildings appropriate to a group of workers.

**The art teacher may at times want to take the liberty to make career education applications through art in the existing curriculum even though the regular classroom teacher does not do so. It is also advisable that the art teacher coordinates her activity with regular classroom activities as closely as possible.

These objectives can easily be expanded and added to as you find additional art activities to coordinate with career education classroom activities. The NOW Program will appreciate your communications concerning your additions.

II. Activities

Note: These activities are divided according to grade level. These activities are only examples of how an art teacher can integrate art lessons with career education activities. Many more activities could and should be developed and incorporated with these activities. Since the elementary art program is on an itinerant basis, the art teacher only sees each class once a week at the most and most often every two weeks. Good rapport is needed between the classroom and art teachers. A great deal of planning is needed on the part of the art teacher to coordinate the art lesson with the teacher's current classroom career education activities.

A. Kindergarten

1. ASK THE STUDENTS TO HANG OUT THE FAMILY CLOTHES. Paste a piece of yarn on a sheet of drawing paper. Ask the students to fill in various articles of clothing with their colored markers or crayons. Ask them to draw in a background of trees, sky, clouds, sun, flowers, and shrubs. This fits in nicely with the NOW Program's unit "My Home—Mom—Dad—Sister—Brother—Me."

2. HAVE THE STUDENTS DRAW VARIOUS ASPECTS OF FARM LIFE AND WORK. Refer to the unit called "The Farm" which is distributed by the NOW Program. Ask the students to draw farm workers performing their duties, animals, buildings, and equipment.

B. First grade

1. HAVE THE STUDENTS DRAW A SELF-PORTRAIT DEPICTING THEMSELVES AS THEIR FAVORITE WORKER. You may extend this activity to any group of occupations. For example, you might ask the students to draw pictures of themselves as their favorite community helper, construction worker, or health worker.

2. HAVE THE CLASS DRAW PICTURES OF ONE THING THAT A WORKER DOES ON HIS JOB. Do this after the teacher has read a story from the "I Want to Be" Series (available through the N.O.W. Program). Pay special attention to tools, implements, job duties, and the appropriate uniform.

C. Second grade

1. HAVE THE STUDENTS CONSTRUCT HATS THAT WORKERS WEAR ON THEIR JOBS. Use construction paper, glue, tape, string, and cardboard. The teacher may want to follow-up this activity with a role playing exercise where the students use their hats as part of a costume to act-out their worker on the job.

2. HAVE THE CLASS CONSTRUCT BUILDINGS OR VEHICLES THAT WORKERS WORK IN. Use cardboard boxes, poster paints, and classroom furniture. The classroom teacher may later use these buildings and vehicle for role playing activities...either adlib or script plays.

D. Third grade

1. ASK THE STUDENTS TO DRAW A FLOOR PLAN OF THEIR HOMES. Materials needed for each student will include: sharp pencils, rulers, and paper. Have the students note that they are, in part, performing the architect's role. This activity may be used in conjunction with a teacher's unit on construction workers. (Refer to "Workers Who Build Our Homes"--available through the N.O.W. Program.)

2. HAVE THE CLASS PLAN A MURAL OF THE CITY SKYLINE OR AN AREA WHERE WORKERS ARE. Provide paints, brushes, and drawing tools for the students to illustrate their mural.

III. Evaluation - Evaluation should be individualized and on an observation basis.

A. As an art teacher, you may primarily want to check the art work for the student's application of color, shapes, and lines. A comparison with previous work will indicate the student's progress in these areas.

B. The art teacher might ask: "What efforts did I make to coordinate my art activity with current classroom activity?"

C. From a career education standpoint, the art products can be valuable to the classroom teacher as well as the art teacher. The art work can reveal what the student knows about workers in general, job duties, and specific groups of workers.

Art work is a useful evaluative tool particularly in the case of non-readers. The teacher may suggest that the students depict an aspect of the working world before she starts a career education unit that involves this aspect, and then give the same assignment after the unit. A comparison of the two products will indicate any progress.

IV. Materials and Resources

A. A variety of art supplies.

B. Refer to the NOW Program's Resource List for occupational learning aides and information.

C. The NOW Program has a vast array of audio-visual materials and equipment that are available at your request from our "Resource Center at Lewiston Comprehensive High School. Refer to the Resource List for a complete list of materials and equipment.

*ART IN CAREER EDUCATION
CAREER EDUCATION IN ART

Grades 4-6

Developed by:

Elaine Cannon
Elementary Art Teacher

In Cooperation with
the N.O.W. Program

*Suggested for classroom teachers as well as art teachers

INTRODUCTION

This unit serves several purposes. Art can reinforce career education activities. Art work can also be a useful evaluative tool for career education activities. Students can also learn more about the many different kinds of artists by making art works representative of the types of work these artists do.

Feel free to use these activities if you are a classroom teacher or an art teacher. Although the activities are specifically intended for the art teacher, the classroom teacher may find them most useful as supplements to regular career activities.

Karen McMahon
Activities Writer

*Art in Career Education
Career Education in Art

**I. Objectives

A. General objectives

1. To integrate art into other existing curriculum areas by emphasizing career education applications in these areas.

2. To introduce the student to various careers in the field of art.

3. To introduce the student to the various skills, interests and abilities needed for careers in art.

4. To help develop the student's hands-on coordination skills.

5. To familiarize the student with the basic art concepts of color, shape, and line.

B. Specific objectives

1. Fourth grade

a. The student will be able to construct a free-form sculpture given two or more objects that relate directly or indirectly to ecology and conservation in Maine.

b. The student will be able to construct a free-form hanging mobile given two or more objects that relate directly or indirectly to his choices of the following industries in Maine: fishing, lumber, paper, and agriculture.

*The art teacher may at times want to take the liberty to make career education applications through art in the existing curriculum even if the regular classroom teacher does not do so. It is also advisable that the art teacher coordinate her activity with regular classroom activities as closely as possible.

**These objectives can easily be expanded and added to as you find additional art activities to coordinate with career education classroom activities. The NOW Program will appreciate your communications concerning your additions.

c. The student will be able to depict his choice of the following natural resources of Maine given magazines, colored paper, crayons, poster board, scissors, and paste: waterways, oceans, minerals, seafoods, forests, mountains, and potato growing country.

2. Fifth grade

   a. The student will be able to draw, color, and write an accompanying dialogue for at least a four-frame cartoon with characters of his choice of two workers from a given group of workers depicting a worker with good work habits and a worker with bad work habits.

   b. The student will be able to lay-out and sketch a newspaper advertisement whose product or service is representative of a given classification of occupations.

3. Sixth grade

   a. The student will be able to construct a free-form sculpture or a structured form given at least two pieces of lumber scrap, a hammer, and nails, and if the student chooses, a working plan.

   b. The student will be able to design, draw, and color an eight frame filmstrip depicting a worker of his choice from a given group of workers performing at least one job duty.

   c. The student will be able to design, draw, and color a greeting card representing an occasion of his choice given construction paper, crayons, scissors, paste, and pencils.

Note: These activities are divided according to grade level. These activities are only examples of how an art teacher can integrate art lessons with classroom activities. Even if careers are not specifically utilized in some classrooms, you may want to take this opportunity to make some of these tie-ins by closely coordinating your activity with the teacher and bringing in careers, or you may take the opportunity to introduce different careers in art. Many more activities could and should be developed and incorporated with these activities. Since the elementary art program is on an intinerant basis, the art teacher only gets around to each class once a week at most. Good rapport is needed between the classroom and the art teacher to coordinate the art lesson with the teacher's current career education activities.

II. Activities

A. Fourth grade

1. COLLECT OBJECTS THAT REPRESENT CONSERVATION AND ECOLOGY IN MAINE: bird feathers, tree branches, pictures of animals, shells, rocks, paper, pictures of smoke stacks, cigarettes, litter of all types, etc. Hand out at least two objects to each student. Make available such things as glue, string, rubber bands, crayons, and paper. Ask the students to compile (individually or in groups) free-form sculptures that they feel represent ecology and conservation in Maine. Introduce the role of the sculptor as artist. You might ask someone who does sculpting in Maine to come into the class and speak about his job as a sculptor and to help direct the classroom activities. You may want to do this activity in conjunction with environmental control occupations.

2. COLLECT OBJECTS THAT RELATE TO MAINE INDUSTRIES: fishing, lumber, paper, and the agricultural industries. Distribute at least two articles to each student. You might ask the students to bring in their own things, if you notify them a week beforehand what they will need. Ask the regular teacher to remind the students to bring the things in. If the class is taking up Maine industry, some things may already be in the classroom. Ask them also to bring in a coat hanger. Provide string and glue. Ask the students to construct a free-form hanging mobile with the materials they brought in. Arrange with the teacher to conduct a classroom discussion on the different careers that are represented in the various mobiles that the students construct.

3. ASK THE STUDENTS TO DEPICT THE FOLLOWING MAINE NATURAL RESOURCES IN THE FORM OF A COLLAGE: waterways, ocean, minerals, seafood, forests, mountains, and growing land. Hand out magazines, colored paper, crayons, posterboard, scissors, and paste. Have the teacher talk about the careers that are involved with Maine's natural resources. Discuss industry and its effect on these natural resources.

B. Fifth grade

1. ASK THE STUDENTS TO MAKE AT LEAST A FOUR-FRAME CARTOON. Ask them to choose two workers from the group of workers they are currently taking up. If they are not taking

up any group of workers, suggest a group. Ask them to depict good worker habits with one worker and bad worker habits with the other. You might also introduce the student to the commercial artist who draws cartoons so that the students can see the different cartooning styles. Materials will include: pencils, rulers, crayons, or felt-tipped markers, drawing paper.

2. ASK THE STUDENTS TO LAY OUT, DRAW, AND COLOR, A NEWSPAPER ADVERTISEMENT. The product or service may be representative of a group of workers that the teacher is currently taking up, or of a worker. of the student's choice. You might show pictures of commercial artists doing the lay-out and drawing of newspaper ads, and explain some of the things that a newspaper artist does.

C. Sixth grade

1. PRESENT THE FOLLOWING WORK ROLES TO YOUR STUDENTS: free-form sculptor, carpenter, and craftsman. Ask them which worker they will represent in a woodworking project. Provide simple work plans for a structure for those who wish to follow the carpenter's role. Provide less structured work plans for those who will represent craftsmen. Ask the craftsmen to make their own innovations with this work plan. Other students may want to do an entirely free-form sculpture. After the activity, pole the students to find out if they were satisfied with their role and product. If some students express interest in other roles, give them the opportunity to test-out these. Ask the teacher to conduct a discussion about individual preferences for structured or unstructured work situations.

2. ASK YOUR STUDENTS TO MAKE FILMSTRIPS. Collect old and useless filmstrips, or ask a film supply company for their waste. Strip the films by soaking them in bleach. Give each student an eight-frame filmstrip. Ask them to depict a worker or workers performing a job duty. The classroom teacher may want to use these filmstrips as an overview of a group of workers she is currently taking up.

3. ASK YOUR STUDENTS TO DESIGN, DRAW, AND COLOR A GREETING CARD. The card may represent an occasion of the student's choice. Have available construction paper, crayons, scissors, paste, and pencils. Provide career information about commercial artists who work for greeting card companies.

III. Evaluation - Evaluation should be individualized and on an observation basis.

A. As an art teacher, you may primarily want to check the artwork for the student's application of color, shape, and line. A comparison with previous work will indicate the student's progress in these areas.

B. The art teacher might ask: "What efforts did I make to coordinate my art activity with current classroom activity?"

C. From a career education standpoint, the art products may be valuable to the classroom teacher as well as the art teacher. The art work can reveal what the student knows about workers in general, job duties, and specific groups of workers.

Art work is a useful evaluative tool particularly in the case of non-readers. The teacher may suggest that the class depict an aspect of the working world before she starts a career education unit concerning this aspect. The teacher may give the same assignment after the unit. A comparison of the two products will indicate any progress.

IV. Materials and Resources

A. A variety of art supplies.

B. Refer to the N.O.W. Program's Resource List for occupational learning aides and information.

C. The NOW Program has a vast array of audio-visual materials and equipment that are available from our Resource Center at Lewiston Comprehensive High School.

DISCOVERING INTERESTS AND CAREERS

Suggested for use in 7th
grade language arts
classes

Developed by:

Eleanor Gove
7th grade language arts teacher

In cooperation with the
N.O.W. Staff

INTRODUCTION

This activity gives the student the opportunity to discover his interest areas, and how these areas can apply to the world of work. The activities in this unit are particularly well-adapted to language arts classes because the primary skills involved are communication skills. The students can express themselves orally, in writing, and in visual media.

These activities provide a strong core on which to build additional individual interest-oriented activities. We strongly urge you (and your students will probably urge you) to spread activities such as these throughout the school year. You will find the students to be strongly motivated, and you will find that they will probably devote some of their free time to discovering more about themselves in relation to the working world around them.

The use of the interest survey and the SRA kits gives the activity structure and direction which sometimes is a problem in individualized activities dealing with large groups of students. A guidance counselor will be most helpful to you when you score the Kuder E Interest Survey, and during general discussion periods concerning personal interests, abilities, and personal appearances.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Discovering Interests and Careers

I. Objectives

A. General Objectives

1. To encourage the student to participate and function in individual as well as group efforts.

2. To help develop discussion skills particularly in the area of sharing ideas about individual interests.

3. To show the student how personal interests relate to career areas.

4. To involve the student in decision-making processes concerning the relationship of his interests to possible career avenues.

5. To encourage the student to express his interests in a variety of media.

B. Specific Objectives

1. By the end of the unit activity, the student will be able to identify at least one vocational area that requires at least one of his personal interests.

2. The student will be able to describe to his own satisfaction the following characteristics about himself:

   a. What I am like now
   b. My appearance
   c. My abilities
   d. My interests

II. Activities

NOTE: The Kuder E Interest Survey should be followed by KEYS and then the SRA WORK KIT. This sequence identifies interests, and applies interests to vocational areas, and finally gives the student the opportunity to choose specific jobs within the vocational areas that apply to these interests. Choose other activities to complement this sequence in any order that is comfortable for your schedule. Teachers who have tried this activity suggest that it occur after the first quarter in the seventh grade.

A. SHOW THE FILM "WHEN YOU GROW UP." This film is well-adapted for seventh graders and will start them thinking about the future.

B. ADMINISTER THE KUDER E INTEREST SURVEY. You might preface this with a short introduction about what interests are, and the fact that the KUDER E is not a test. It cannot be graded. There are no right or wrong answers. It is only an indication of the things that the student likes to do and doesn't like to do.

C. HAVE THE STUDENTS SCORE AND INTERPRET THE SURVEY RESULTS. Briefly discuss the implications and answer questions. A follow-up activity might consist of asking a guidance counselor to come into the class and hold a group guidance session. One way to lead the discussion would be to pass out a mimeographed sheet that includes such categories as:

1. What I am like now.
2. My appearance.
3. My abilities.
4. My interests.

Have them write down their responses to the four categories. The group guidance session could help the student discuss these things in a relaxed manner with the rest of the class. The interest survey results could become a part of the student's cumulative record.

D. ALLOW GROUPS OF STUDENTS TO EXPLORE THEIR INTERESTS IN TERMS OF OCCUPATIONAL AREAS WITH THE SRA KEYS KIT. You will probably need a Dukane projector or a cassette-filmstrip viewer of some sort to use this kit. Assemble students in groups according to interest areas or allow them to work individually. Give each group or student the appropriate KEYS kit. They can then explore occupations that fit in with their interests.

E. SOME OF THE FOLLOWING FILMS MIGHT HELP PROMOTE CLASS DISCUSSIONS ABOUT CAREERS: "Making a Choice" and "Leisure Industries" are both available through the N.O.W. Program. "New Horizons in Vocations," also available through the N.O.W. Program, is a particularly good film for students who like to work with their hands. Discussion topics might include: interests, skills, abilities, attitudes, and values necessary for the different career areas.

F. GIVE EACH STUDENT THE OPPORTUNITY TO USE THE SRA WORK KIT. This kit will give the student the opportunity to find out about more specific job choices that apply to his interests. Ask each student to write a description of an imaginary day at work for one of the jobs that go along with his interests.

G. ASK YOUR STUDENTS TO MAKE A COLLAGE THAT WILL REPRESENT THEIR INTERESTS IN A SPECIFIC OCCUPATION. Some students may prefer to do mobiles. Magazines, poster board, paste, scissors, and assorted junk are handy materials to have around for this activity. Encourage the students to use their creativity, but at the same time to make a total composition that communicates the student's interests and feelings about a specific area. In other words, the shape and content of the composition should be indicative only of the chosen area. This activity may be carried on throughout the unit and may reveal the student's growth in awareness about his interests.

III. Evaluation

Evaluation should be on an individual basis. The KUDER E Survey results may be helpful to you at other times when planning classroom activities centered around student interests. Collages and mobiles may be evaluated according to the following criteria:

1. What was the student's subject?
2. How does this subject correlate with his interests according to the interest survey?
3. How well did the student coordinate shape and content to make a total composition?

IV. Materials and Resources

A. Materials available through the NOW Program

   a. Films: "When You Grow Up," "Making a Choice," "Leisure Industries," "New Horizons in Vocations"

   2. SRA Kits: Kuder E Interest Survey, KEYS, WORKITS

B. Helpful materials to have around:

   1. Poster board
   2. Old magazines
   3. Paste
   4. Scissors
   5. Assorted odds and ends
   6. Composition paper

C. Equipment

   1. Dukane projector
   2. Movie projector
   3. Screen

COMMUNICATIONS SKILLS IN CAREERS

Suggested for use in
8th Grade Language Arts
Classes.

Developed by:

Sharon Martin
Language Arts Teacher

In Cooperation with the
N.O.W. Staff

Introduction

Speaking, writing, and listening are communication skills. There is no work-life situation that does not use these skills. This unit is intended to help the eighth grade language art student develop speaking, writing, and listening skills, and to show the correlation of these skills to the world of work.

In the process of exploring three careers of his choice, the student discovers how these communication skills are important through career information,research, and letter and speech writing. This unit also provides the student with a basis for evaluating the effectiveness of a speech, the organization of a letter, and the ability to listen.

We encourage you to modify and improve this unit to the needs of your classroom individuals.

Karen MaMahon
Activities Writer
N.O.W Exemplary Program

Communications Skills in Careers

I. Objectives

A. General objectives

1. To help the student communicate on the oral amd written levels.
2. To encourage the student to listen to and analyze the communications of others.
3. To enable the student to recognize the value of communication in work-life situations.
4. To encourage the student to apply communication skills in occupationally-oriented learning activities.
5. To enable the student to have a knowledge of careers that require the use of communication skills.
6. To give the student a basis for evaluating the effectiveness of communications.
7. To encourage the student to analyse interests as they apply to careers.

B. Specific objectives

1. By the end of the unit activity, the student will be able to identify two work role characteristics, the education/training requirements, an advantage and a disadvantage for three occupations of his choice.
2. The student will be able to demonstrate his knowledge of the four aspects of successful speech making.
3. The student will be able to write an organized speech by using the three elements of a well-organized speech.
4. The student will be able to demonstrate his knowledge of the four basic parts of a business and personal letter.
5. The student will be able to demonstrate his knowledge of the seven aspects of good listening.

II. Activities

A. ADMINISTER AN INTEREST SURVEY SUCH AS THE KUDER E. If some of your students have already taken this test, refer to their cumulative folders for their profile results. Ask each student to choose three careers that are representative of their highest interest areas.

B. INTRODUCE YOUR STUDENTS TO THE COMMUNICATION SKILLS THAT ARE IMPORTANT TO ALL CAREER AREAS: writing letters, speech making, and listening. Give them the following information about these skills.

1. Speech making-

   a. Writing a speech:

      1.) Introduction - present the subject.
      2.) Body - discuss the subject in detail.
      3.) Conclusion - summarize points in body and draw conclusions.

   b. Giving the speech:

      1.) Proper selection of subject matter for the audience.
      2.) Undistractive body movements by the speaker.
      3.) Clear and audible speech.
      4.) The use of voice, facial expression, and body movement to promote the interest and understanding of the audience.

2. Listening-

   a. Avoid distracting the speaker or others who are listening.
   b. Be aware of non-verbal communication.
   c. Recognize the speaker's purpose.
   d. Know what's fact and what's opinion.
   e. Recognize and analyze details in the body of the speech.
   f. Notice whether the conclusion supports the details in the body.
   g. Ask questions after the speech pertaining to the subject matter in the speech.

3. Letter writing (business and personal) -

   a. Opening a letter.
   b. Body of a letter.
   c. Closing a letter.
   d. Paragraphing.

*Refer to IV. Materials and Resources for a list of University of Maine films that are appropriate for these topics.

C. DEVELOP THE FOLLOWING ACTIVITIES TO SHOW THE CORRELATION BETWEEN EACH STUDENT'S CAREER CHOICES AND COMMUNICATION SKILLS:

1. Display general occupational information.
2. Ask the students to research the following occupational information for each career:

    a. Two work role characteristics.
    b. Education/training requirements.
    c. An advantage.
    d. A disadvantage.

3. After talking about how to write a business letter, ask the students to write three business letters to businesses who employ people who have jobs similar to their job choices. Ask the students to request information about job opportunities, salary, and working conditions. Use the return letters as information sources and examples of business letters. Compare letters as a class.

4. After the students have throughly researched their job choices, ask them to choose one of these jobs as a speech topic. Ask each student to give his speech as if he were actually a person working in this field. Students will discuss the following in their speeches:

    a. Work role characteristics.
    b. Salary.
    c. Education/training requirements.
    d. Advantages.
    e. Disadvantages.
    f. Job outlook.
    g. Reasons for working in this field.

5. Have the students listen to and evaluate each others speeches. Discuss the characteristics of a good listener as outlined in B.,2. You may want students to make their evaluation on a sheet similar to the inserted example at the back of this package.

6. Have a final discussion about the role of communication skills in the world of work.

III. Evaluation

A. To what extent did the student meet the specific objectives of this unit?

1. Researching occupational information on three careers.
2. Demonstrating his knowledge of the four aspects of successful speech making.
3. Writing an organized speech by using the three elements of a well-organized speech.
4. Demonstrating his awareness of the seven aspects of good listening.

B. To what extent did the activities in the unit help the students meet the objectives?

IV. Materials and Resources

A. Career information materials:

1. Occupational Guidance Series, Finney Co.
2. SRA Career Information Kit.
3. SRA Occupational Exploration Kit.
4. Interview Cassettes.
5. Careers for Good Speakers, J. Weston Walch Poster Series.
6. Careers for Good Writers, J. Weston Walch Poster Series.

B. Films on subject matter: (available from the University of Maine Film Rental Library given two to three weeks notice)

1.	Speech: Effective Listening	$3.50	jh-sh.
2.	Speech: Planning Your Talk	2.50	jh-sh-c-ad.
3.	Speech: Using Visuals in Speech	3.50	sh-c-ad.
4.	Speech: Using Your Voice	2.50	jh-sh-c-ad.

Student's Name: ____________________

INSERT I

Evaluation Sheet

Speaker's Name: ____________________

Speaker's Topic : ____________________

	(circle one)			
	excellent	good	fair	poor
How was the speech organized?	4	3	2	1
To what extent did the speaker observe the four aspects of good speech making?				
a. Proper selection of subject for audience	4	3	2	1
b. Undistractive body movements	4	3	2	1
c. Clear and audible speech	4	3	2	1
d. The use of voice, facial expression, and body movement	4	3	2	1
To what extent did the facts support the conclusions?	4	3	2	1
To what extent did the speaker interest you?	4	3	2	1
How well did the speaker introduce his subject?	4	3	2	1

Check-off the job facts the speaker included:

____work role characteristic

____salary

____education/training requirements

____advantages

____disadvantages

____job outlook

____reasons for working in the field

General comments about the speaker's performance: ____________________

____

____

____

____

English--Grammar & Composition

CAREER RESEARCH PROJECT

I. Objectives

A. General objectives

1. To help the student improve research skills.
2. To encourage the student to work independently.
3. To help the student explore a career that correlates with his interests.
4. To expose the student to many different careers.
5. To give the student additional experience in report writing, letter writing, and oral presentations.
6. To encourage the student to develop public relations skills.

B. Specific objectives

1. By the end of the unit study, the student will be able to describe in writing and orally the skills, abilities, education/training requirements, future outlook, advantages, and disadvantages, salary, necessary interests, and duties for a job of his choice.
2. The student will be able to take the necessary steps to make arrangements for a resource person to come into the classroom to give a presentation about his work.
3. The student will be able to write a business letter to ask a business information about job opportunities and requirements at that place of work.
4. The student will be able to conduct an interview with a local businessman concerning the kind of work he does, training/education requirements, necessary skills, interests, abilities, and advantages and disadvantages.

II. Scope and Sequence

A. Introduction-choosing a research topic: a career that correlates with interests, skills, and job satisfactions

1. Have the students participate in a Vocational Exploration Group to:

CAREER RESEARCH PROJECT

    - a. Help develop communications skills when talking about jobs.
    - b. Refine career decisions.
    - c. Help the student make a choice for a research topic.

2. Introduce the students to the resources that can help provide occupational information such as:
    - a. Necessary skills, abilities, interests.
    - b. Education/training requirements.
    - c. Future outlook.
    - d. Job advantages and disadvantages.
    - e. Salary.
    - f. Job duties.

SUGGESTED NOW RESOURCES:

1. Vocational Exploration Groups.
2. Finney's-Finding Your Job.
3. Interview Cassettes.
4. SRA Occ. Exploration Kit.
5. Occupational Outlook Handbook.

B. Independent research- Ask the student to find out the above information by:

1. Researching available occupational information.
2. Writing a business letter to a business who has jobs in the student's interest area.
3. Interviewing a local businessman whose job is similar to the student's choice.

C. Ask the student to share this information with the rest of the class by:

1. Giving an oral presentation.
2. Writing a report.
3. Asking a resource person to come into the classroom and speak about his job. (Parents are very often willing to cooperate as resource persons.)

English--Media

TELEVISION

I. Objectives

A. General objectives

1. To introduce the student to the occupations involved in the production of television shows and commercials.

2. To show the student how communication skills can be occupational skills.

3. To help train the interested student in the use of video-tape equipment.

4. To help the student understand the role of the media in our everyday lives.

5. To help the student understand how television influences people.

B. Specific objectives

1. By the end of the unit study, the student will be able to name seven jobs that are involved with the production of television shows and commercials.

2. The student will be able to describe the skills, abilities, education/training requirements, future outlook, advantages and disadvantages, necessary interests, and duties of each of these workers.

3. The student will be able to write a script for a television show, news cast, or commercial.

4. The student will be able to perform a job function from the following list of workers that could be involved in the production of a television show, newscast, or commercial:

   a. Writer.

   b. Producer-director.

   c. Set designer.

   d. Properties manager.

   e. Camera man.

f. Editing man.

g. Announcer.

h. Master of ceremonies.

i. Actors.

j. Contestant.

h. Sound-music-special effects workers.

i. Technical assistant.

II. Scope and Sequence

A. Introduction to subject matter:

1. The role of television in our everyday lives:

a. Information previously unavailable.

b. Communications throughout the world.

c. The media is constantly changing our life-styles by exposing us to the life-styles of peoples throughout the world.

d. An individual's experience can become the experience of millions.

2. How television advertising influences people:

a. The power of suggestion.

b. Famous person approach (If Bobby Orr likes it, you'll like it.).

c. The economical approach (more for your money).

d. The "Best and Greatest" approach.

e. The masculine or feminine image approach.

f. The special offer approach (one time only...).

3. Television and careers;
    a. Writer.
    b. Producer.
    c. Director.
    d. Set designer.
    e. Properties manager.
    f. Camera man.
    g. Editing man.
    h. Announcer.
    i. Master of cermonies.
    j. Actor.
    k. Sound-music director.
    l. Special effects man.
    m. Technical assistant.

SUGGESTED NOW RESOURCES:

Actor-Career Monograph.
Careers for Good Speakers-Poster Series.
Careers for Good Writer-Poster Series.
Communication-Film.
Mass Communication-Tapes Unlimited.
Your Career in TV and Radio-Book.
Finding Your Job Series-Finney.

A television will be useful in your classroom for the introduction to illustrate advertising techniques and the role of television in our everyday lives.

An excursion to a local television station will help provide additional occupational information.

B. Independent study-

1. Ask the students to research at least seven occupations involved in the production of television shows and commercials. Ask them to incorporate the following information in their written or oral report: skills, abilities, education/training requirements, future outlook, advantages and disadvantages, necessary interests, and duties for each of the workers.

2. Ask the students to write a script for a television show, newscast, or commercial.

C. Concluding activities

1. Instruct interested students in the use and care of video-taping equipment:

    a. Decks--editing and recording.

    b. Tapes.

    c. Cameras.

2. Using the above scripts, allow students to role-play the television occupation of their choice. Tape the finished product, and conduct evaluation sessions concerning the collective efforts of the class to make the programs.

SUGGESTED NOW RESOURCES: Video-tape decks.
Video-tapes.
Video-camera.
Tripod or monopod.

SCIENCE

Careers and Topographical Map Reading

I. Objectives

A. General objectives

1. To introduce the student to the careers and leisure time activities that have a use for topographical map reading.

2. To show the relationship between contour and topographical maps.

3. To help the student recognize geological formations with the use of the topographical map.

4. To enable the student to perceive spatial relationships.

5. To encourage the student to recognize some environmental needs of a given area when shown a topographical map.

B. Specific objectives

1. By the end of the unit activity, the student will be able to name eight careers and/or leisure time activities that could use topographical map reading skills to advantage.

2. The student will be able to describe the skills, abilities, interests, education/training requirements, job outlook, and an advantage and a disadvantage for each career or leisure time activity.

3. The student will be able to construct a simple contour map that respresents the topography on a topographical map.

*4. The student will be able to construct a scale model of the lay of the land from a topographical map.

*optional

II. Scope and Sequence

A. Introduction

1. Introduce the student to topographical map reading.

- a. Topographical maps:
    - 1. How they are made...Who makes them.
    - 2. What they represent.
- b. How to read a topographical map:
    - 1. Using a stereoscope.
    - 2. Making a contour map from a topographical map.

2. Careers and leisure-time activities that can use a topographical map to advantage:
    - a. Urban planning careers.
    - b. Wild life management.
    - c. Geologist.
    - d. Heavy equipment operator.
    - e. Engineer-agricultural, civil, geological.
    - f. Construction worker.
    - g. Landscaping technician.
    - h. Surveyor.
    - i. Cartographer.
    - j. Forestry worker.
    - k. Farmer.
    - l. Hunter.
    - m. Fisherman.
    - n. Camper.
    - o. Pilot.

Suggested NOW Resources: Stereo Photo Kit
SRA-Career Information Kit
Finney's-Finding Your Job
Career Monographs

NOTE: The state wildlife, fishery servic and conservation service may be helpful in providing additional occupational information, resource persons, and topographical maps of Maine.

B. Classroom activity

1. Students read and interpret topographical maps for:
   a. Geological formations.
   b. General contours.
   c. Spatial relationships of land formations.
   d. Some environmental needs of that area given the information from the topographical map.
2. Students make some contour maps from topographical maps.
3. Students are given the opportunity to research eight careers and leisure time activities for job facts.
4. State wildlife and fishery department and the conservation department may help provide occupational information through literature, resource person visits, and additional topographical maps.
5. More motivated students may want to make a scale model of a section of land that is represented on a topographical map.

C. Concluding activities

1. Students may want to do some land use exercises using their contour maps or scale models as working plans:
   a. Urban areas.
   b. Suburban areas.
   c. Wildlife preserve.
   d. Parks and recreation areas.
   e. Pulp woodlands.
   f. Marshlands.

2. Students write about or describe the eight careers they researched that can use topographical maps to advantage.
3. Students indicate the careers that could be involved in their land use plan.

Suggested NOW Resources: Excursions in Outdoor Measurement by Donovan A. Johnson, J. Weston Walch, Publishers, can provide additional outdoor activities.

ENVIRONMENTAL SCIENCE

Recycling Careers

I. Objectives

   A. General objectives

      1. To encourage the student to find creative solutions to solid waste problems.

      2. To orient the student to the careers that could be involved in solving solid waste problems.

      3. To allow the student to try-out some of his solutions to solid waste problems.

   B. Specific objectives

      1. By the end of the program activity, the student will be able to discover three ways to recycle solid waste.

      2. The student will be able to name four careers that could be involved in solving solid waste problems.

      3. The student will be able to describe to his own satisfaction the work role and its function in our society for each of these occupations.

II. Scope and Sequence

   A. Introduction

      1. Pre-test the students' awareness of solid waste problems and careers. Use specific objectives as a test model.

      2. Discuss: What is solid waste?

      3. Discuss: What careers could be involved in solving the solid waste problem?

   B. Class activity

      1. Collect solid waste such as the following:

         a. Paper.

         b. Bottles.

2. Decide what the solid waste will be used for. Some items might include:
    a. Recyclable paper for a paper recycling company.
    b. Glasses, vases, candleholders, etc. from bottles.
    c. Candles in cut and decorated bottles.
3. Obtain materials and equipment and make arrangements with a paper recycling company. Materials might include:
    a. Glass stain.
    b. Acrylic paint.
    c. Glue.
    d. Hodgepodge.
    e. Glass cutter kits.
    f. Paraffin.
    g. Candle wicks.
4. Students may be able to carry on the making of the recycled products with an art instructor who may have the room and materials to conduct the recycling projects.

C. Concluding activities

1. Have the students research further the occupations that can be involved in solving solid waste problems.
2. Have each student assess the work role and its function in our society to at least four occupations.
3. Post-test the students' awareness of solid waste problems and careers as you did on the pre-test.
4. Compare pre- and post-test results.

Suggested NOW Resources: An Analysis of the Fifteen Career Clusters: Environmental Careers.
SRA-Career Information Kit.

Transportation Occupations

CAREERS IN AEROSPACE

Suggested for use in
8th or 9th Grade
Science Classes

Developed by:

Roger Labbe
Grade 8 Science
Lewiston Junior High School

In cooperation with the
N.O.W. Staff

INTRODUCTION

Although the excitement of a few years ago that was associated with space exploration has somewhat lessened, there is still considerable opportunity in aerospace careers. This unit introduces the student to some of these careers as they relate to the subject of astronomy and science in general. This is important because aerospace occupations have not only significantly contributed to space exploration--but to many areas in the scientific field such as electronics, chemistry, geology, and medicine.

Your students will probably enjoy working in groups with other class members in the exploration of job duties, responsibilities, education requirements, advantages and disadvantages, training, skills, abilities, and interests for aerospace careers.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Transportation Occupations

CAREERS IN AEROSPACE

I. Objectives

A. General objectives

1. To give a brief introduction to astronomy as a subject area and aerospace as a career area.

2. To give the student an opportunity to associate other subject matter skills such as math and language arts with skills needed in aerospace careers.

3. To enable the student to become more familiar with general trends in space exploration.

4. To emphasize the following career education concepts in relation to careers in aerospace:

   a. Job characteristics and individuals must be flexible in a changing society.

   b. Job specialization creates interdependency.

   c. Education and work are interrelated.

   d. Individuals differ in their interests, abilities, attitudes, and values.

5. To give the student a realization of the economic potential of various careers in aerospace.

B. Specific objectives

1. By the end of the unit study, the student will be able to state four personal qualifications for success in aerospcae careers.

2. The student will be able to state three reasons why a career in aerospace is attractive or unattractive to him.

3. The student will be able to state at least three geographic locations where it is possible to work in the field of aerospace.

4. The student will be able to state five career specialities within the area of aerospace.

5. The student will be able to choose one career from the above five specialities and will be able to:

   a. Relate it to 1. through 3. above.

   b. State the education training requirements.

   c. State possible pay scales in the various geographic areas.

6. Given problems that selected workers in aerospace might solve, the student will be able to help develop a solutio to at least four problems that require the use of the following subject areas: basic astronomy, math, and/or language arts.

II. Activities

A. ASK YOUR STUDENTS TO WRITE A PARAGRAPH GIVING THREE REASONS WHY THEY WOULD LIKE OR NOT LIKE TO HAVE A JOB IN THE FIELD OF AEROSPACE. Tell them that this assignment is ungraded, and is only a way for you to discover their present knowledge about astronomy and careers in aerospace, and their interests.

B. HAVE THE CLASS CONSTRUCT AN AEROSPACE CAREERS BULLETIN BOARD:

1. Either hang up a poster of the universe you already have, or have the students draw or construct a poster from colored paper, poster paper, and colored markers.

2. Divide the class into four or five groups (4-5 members per group). Try to put at least one or two highly motivated students into each group. You may find this out by reading the results of activity A.

3. Assign each group a destination in the universe. Make sure this destination is observable through a small telescope.

4. Give each group at least five career specialities in the area of aerospace to work with:

   a. Astronaut,

   b. Astronomer,

   c. Dynamical astronomer,

   d. Aeronautical dietician: food, air & water.

   e. Communications specialist in aeronautics.

c. The space dietician knows that two astronauts need 1.5 gallons of drinking water per day. She also has the following information concerning the journey: The spaceship will travel approximately 17,000 m.p.h. The distance is the same as a. above. From this information she must know how long it will take to reach the destination. The answer will be in the form of hours. Change hours time to days. From there compute the number of gallons of water the astronauts will need to reach their destination and return to earth. Add this information to the bulletin board.

d. Write an explanation of what a communications specialist in aeronautics and an astronaut would do if suddenly all communication with Earth was cut off.

e. With a camera try to take pictures using a telescope of various celestial bodies. Add these along with magazine cut-outs to the bulletin board.

C. IF THERE IS A PLANETARIUM IN YOUR COMMUNITY TAKE THE CLASS TO VISIT A SHOWING. Add information and pictures to the bulletin board.

D. ASK RESOURCE PERSONS IN THE AEROSPACE FIELD TO COME TO THE CLASS TO SPEAK ABOUT THEIR OCCUPATIONS. Prepare your students to ask questions about job duties, responsibilities, advantages, and disadvantages, salary, education/training requirements, skills, abilities, interests, and outlook.

III. Evaluation

A. Give your student a questionaire similar to the one suggested in II. Activities, A. after the completion of the unit activities. A comparison of the students' answers will reveal their growth as a result of the unit activity.

B. Check each student's contribution to the unit projects by using the specific objectives as your measure. Check-off the objectives as they are met.

C. Analyze the activities in this unit by their effectiveness in helping the students meet unit objectives.

D. Change and add activities to meet your needs and the needs of your students.

5. Have the groups research for one class period job characteristics as described in I., B., 5. Make available appropriate materials and resources. Give them a brief description of what each job might entail on a given journey. You might get your information from the D.O.T., Occupational Outlook Handbook, Encyclopedia of Careers, Volume II, SRA Occupational Exploration Kit, or Finney's Series. While introducing these careers emphasize the following concepts as they relate to aerospace careers:

   a. Job characteristics and individuals must be flexible in a changing society.

   b. Job specialization creates interdependency.

   c. Education and work are interrelated.

   d. Individuals differ in their interests, abilities, attitudes, and values.

6. Combine the above information and add it to the bulletin board:

   a. Attach copies of reports.

   b. Attach various lines and symbols standing for job performances of these workers. Example: A colored line or string is stretched from Earth to a given destination. Written along the line might be a statement such as this: The astronomer may estimate distances by looking through a telescope. (Have a small drawing or picture of a telescope at a given point on earth.)

7. Write-up problems that the five mentioned aerospace workers might face on a given destination. Examples:

   a. Have the class construct several telescopes. (Refer to page 384 Astronomy in Action.) Have each group estimate the distance from the assigned destination with the use of the telescope. Check it with actual astronomical findings. Add this information to the appropriate place on the bulletin board.

   b. Compute the trajectory line of travel a spacecraft must follow from Earth to the assigned destination taking into consideration the following variables: the craft's path, position, and the spacecraft's speed. Add this information to the bulletin board.

IV. Materials and Resources

A. The American Astronomical Society and The National Aerospace and Education Council has a variety of information to offer in the astronomy-aerospace fields.

B. Occupational Information

1. Encyclopedia of Careers, volume II.

2. The Occupational Outlook Handbook.

3. The Dictionary of Occupational Titles.

4. SRA Occupational Exploration Kit.

5. Finney's - Finding Your Job.

C. Suggested text as information:

1. Astronomy in Action - The teacher's edition has a selection of films and other materials.

2. Your Future in NASA, Levine, ARCO Pub., New York, 1971.

D. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our "Resource Center" at Lewiston Comprehensive High School.

1. Tape recorders, microphones.

2. Video-tape equipment.

3. Cameras, films, flashcubes.

4. Projectors, screens.

MATHEMATICS

The Metric System and Careers

I. Objectives

A. General objectives

1. To familiarize the student with the uses of the metric system.

2. To show the relationship of the metric system to a consumer-oriented society.

3. To orient the student to mathematics careers that can be affected by the metric system.

4. To help the student develop skills in converting standard and metric measures.

B. Specific objectives

1. By the end of the program activity, the student will be able to name ten mathematics careers that can be affected by the metric system.

2. The student will be able to describe the following information about five of the above careers: interests, skills, abilities, education and/or training, two job functions, a disadvantage and an advantage.

3. Given a math problem in standard measure, the student will be able to change the problem to metric measure.

4. Given a math problem in metric measure, the student will be able to change the problem to standard measure.

5. The student will be able to describe a practical application for each given problem.

II. Scope and Sequence

A. Introduction

1. Pre-test students per specific objectives 1.-5.

ex. Name ten math careers that can be affected by the metric system.

Change the following metric problem into standard measure. Give me a practical application of this problem.

2. Collect data and save for comparison with post-test results.

3. Introduce the practical applications of the metric system in a consumer-oriented society by having your class play the Decimeter Game.

4. Discuss the occupations encountered while playing the game:

    a. Necessary skills, interests, and abilities.

    b. Education and/or training requirements.

    c. Job function.

    d. Disadvantages and advantages.

B. Class exploration of additional careers

1. Use the NOW Program's library of math and careers materials to provide additional information about math in the world of work (list available from department head).

2. Whenever possible, have the class work on problems that these workers encounter.

3. Do standard and metric conversions with these problems.

4. Discuss the effects of the metric system on our society in relation to these careers in mathematics.

5. Play Decimeter Game for review and further development of metric system skills. The Metric System: A Programmed Approach may also be helpful.

C. Concluding activities

1. Post-test the students per specific objectives 1.-5. as in pre-test procedure.

2. Compare pre- and post-test results with the class.

3. Use the pre- and post-test procedure as an example of of how a statistician finds out information.

4. Briefly describe how the pre- and post-test results can be used to provide statistical data.

Suggested NOW Resources:

5-Decimeter Games and The Metric System: A Programmed Approach.

Teacher's choice of the following:

- Geometry in Occupations.
- Algebra in Occupations.
- Math in the Home.
- Math in Nature.
- Math in Everyday Life.
- Math in Space.
- Math in Life.
- Opportunities in Math.

U.S. HISTORY

Journalism Careers and the History of Journalism in America

I. Objectives

A. General objectives

1. To help the student realize the relationship of journalism and political cartoons to the history of the United States.

2. To expose the student to examples of journalism and political cartoons that have influenced American history.

3. To show the student the relationship of journalism and political cartooning to the contemporary political scene.

4. To orient the student to career opportunities in journalism and political cartooning.

B. Specific objectives

1. By the end of the unit activity, the student will be able to write a headline story of his choice about a historical event in U.S. history.

2. The student will be able to draw a political cartoon of his choice that represents a political event in U.S. history.

3. The student will be able to describe three functions of journalism and political cartooning in current political events.

4. The student will be to name four career opportunities in journalism and political cartooning.

5. The student will be able to describe the job function, education/training requirements, necessary interests, skills, and abilities that a journalist and political cartoonist need.

6. The student will be able to describe to his own satisfaction how the study of political science and U.S. history can be beneficial to the journalist and political cartoonist.

II. Scope and Sequence

A. Introduction:

1. Using "History in Headlines" and "Classic Political Cartoons," show the relationship of journalism and political cartooning to the history of the United States.

2. Introduce the journalist and political cartoonist as occupations.

Suggested NOW Resources: History in Headlines-Denver Post, Des Moines Register, Altanta Constitution.

Classic Political Cartoons.

Your Career in Journalism.

Joseph Pulitzer.

First Woman Editor.

B. Classroom activity:

1. Students write headline stories of their choice about historical events in U. S. history.

2. Students draw political cartoons of their choice that represent political events in U.S. history.

3. Students visit a local newspaper to see journalists on the job and to observe UPI and AP printouts.

4. Students research journalism as a career per specific objectives 4., 5., and 6.

Suggested NOW Resources: same as above.
SRA-Career Information Kit.

Finney's-Finding Your Job.

Career Monographs.

C. Concluding activities:

1. Class discussion on the functions of journalism and political cartooning in current political events.
2. Students report on career opportunities and job facts concerning journalism and political cartooning in relationship to the study of political science and U.S. history.

Hospitality and Recreation
Careers
Consumer and Homemaking Careers

CAREERS IN FRENCH CUISINE

Suggested for Use in Intermediate French Classes

Developed by:
Claire Bolduc
Junior High French Teacher
In cooperation with
the N.O.W. Staff

INTRODUCTION

This unit can be completed within a semester. It can, also, be adapted to any foreign language. These activities need not be done all at once but may be comfortably spread throughout the semester. The student will not only be introduced to careers in French cuisine, but he will have the opportunity to expand language development skills and to learn something about the French culture.

The home economics department can assist the class by providing kitchen facilities so that the students may make their own French meal going by a menu they made up. Students will enjoy role-playing the careers they encountered on the field trip in their own French restaurant.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Careers in French Cuisine

I. Objectives

A. General objectives

1. To introduce the student to careers which involve French cuisine.
2. To help the student realize that education and work are interrelated.
3. To compare American cuisine with French cuisine.
4. To help develop the following French language skills: vocabulary, grammar, and idiomatic expressions.

B. Specific objectives

1. By the end of the unit activity, the student will be able to compare three aspects of American cuisine with three aspects of French cuisine (appetizer, main dish, desert).
2. The student will be able to define, pronounce, write, and use the following words in complete sentences:
   - a. Hors d'oeuvres
   - b. Gourmet
   - c. Glutton
   - d. A la Carte
   - e. Table d'hote
   - f. Maitre d'hotel
   - g. Cuisine
   - h. Saute
   - i. Pie à la mode
   - j. Garçon
   - k. Chef
   - l. Coq au vin
   - m. Flambé
   - n. Roquefort
   - o. Crêpe suzette
   - p. Soufflé
   - q. Entrée
   - r. Aperitifs
   - s. Liqueur
   - t. Creme de menthe
   - u. Julienne salad
   - v. Au gratin
   - w. Blanche
3. The student will be able to write a menu in French for a French meal.
4. The student will be able to name three occupations involved in running a French restaurant.
5. The student will be able to describe in French three duties for each of the above workers.
6. The student will be able to prepare a French dinner in conjunction with the home economics department.

II. Activities

A. HAVE THE STUDENTS PREPARE A CLASS PRESENTATION ON AMERICAN AND FRENCH CUISINE. Compare appetizers, main dishes, and desserts. Have each student make an American menu using these three elements. Then give them choices of French appetizers, main dishes, and desserts. Let them also make a French menu. Compare the results. Bring in an American cookbook and a French cookbook so that the students can compare the preparation and ingredients of their American and their French meal. Display food pictures from French and American magazines.

B. ARRANGE TO HAVE RESOURCE PERSONS COME INTO THE CLASS AND SPEAK. Prepare the class to ask questions in French concerning job duties, training, job satisfactions, and necessary tools and implements. Some of these workers might include:

1. Chef from a French restaurant
2. A specialist in Franco-American or Canadian cuisine
3. A connoisseur or a salesman of French wines
4. A caterer who specializes in French bread and pastries
5. Waiter or waitress
6. Host or hostess
7. Franco-American housewife
8. Native French housewife

C. COLLECT INFORMATION FROM THESE RESOURCE PERSONS. Display photographs and written accounts. As a class exercise, have the students write two short compositions or give an oral presentation in French about the resource person of his choice. Ask the students to express their opinion in French whether or not these workers' jobs were appealing to them.

D. ARRANGE FOR THE CLASS TO TAKE AN EXCURSION TO A FRENCH RESTAURANT. Pay special attention to the workers and their duties as mentioned in specific objectives 4. and 5. Tell the students before they go on the field trip that they will have to write or give an oral report about three workers at the restaurant and will have to describe three duties for each of these workers (in French). As preparation to the field trip, introduce the types of workers they can expect to see. Prepare them to ask questions about restaurants.

At the restaurant pay special attention to workers and their duties, the menu, and actual food preparation and ingredients. Make comparisons with an American restaurant that the students are familiar with in the area.

E. HAVE THE STUDENTS WRITE OR GIVE ORAL REPORTS ABOUT THREE WORKERS AT THE RESTAURANT. Tell the students that they will organize and prepare a French meal to which guests will be invited. Make preliminary plans for a French dinner. Make up a menu. Form committees. Ask for the home economics department's cooperation in preparing the meal.

III. Evaluation

A. The teacher will administer pre- and post-tests utilizing new French words, grammar, and idiomatic expressions as outlined in specific objectives 2.

B. A written test will be administered covering French language development.

C. A written or oral account of the resource persons and of the career field trip will be required of each student.

IV. Materials and Resources

A. The Art of French Cooking, Fernade Garvin.

B. Gourmet, magazine series.

C. The Joy of Cooking.

D. Que Ferai - Je Plus Tard?, Simone.

E. Duden - Francais.

Foreigh Languages

FRENCH I and II

I. Objectives

A. General objectives

1. To develop a mastery of the following skills:
    - a. Conversational skills.
    - b. Grammatical structures.
    - c. Reading skills.
    - d. Writing skills.
2. To help develop independent study habits.
3. To help the student develop an appreciation of his own culture as well as others .
4. To introduce the student to the occupations in the area that require French speaking ability and/or comprehension.
5. To introduce the student to other occupations where French is helpful.

B. Specific objectives-these are career education objectives.

1. By the end of the course study, the student will be able to demonstrate his mastery of conversational skills necessary for a local worker who must use French on the job.
2. The student will be able to demonstrate his mastery of grammatical structures by describing the grammatical structure of the above conversational skills in terms of "Lewiston French" and then the grammatical structure of similar conversational skills in standard French.
3. The student will be able to demonstrate his mastery of French reading skills by reading in French a job description that requires French speaking skills.
4. The student will be able to demonstrate his mastery of French writing skills by writing a résumé in French for the above job.

II. Scope and Sequence

A. Standard French in relation to "Lewiston French".

B. The French culture and how it is represented in Lewiston:

1. Customs.

2. Jobs in Lewiston where French is either helpful or necessary:

a. Restaurant jobs.

b. Hospitals.

c. Mills.

d. Shops.

e. Travel agencies.

f. Any job requiring interaction with the people of Lewiston.

NOTE: An introduction to these jobs may be easily integrated into everyday subject matter by asking guest speakers who represent the above workers to come into the classroom and act as resource persons. Follow-up activities to guest speakers might include new vocabulary words and conversational skills, and writing skills. Since many places who employ French speaking workers are within walking distance, fieldtrips to these places can help give students a better idea how these workers actually function within the community. Follow-up activities could be done much the same as with resource persons. Role playing is always an effective follow-up activity. It can give the students the chance to exercise written and/or conversational skills. Example: One student could be a shop customer and the other could be the owner. A transaction in French could then take place. Exploration homework assignments could provide pertinent job information.

C. Other occupations where an understanding of and/or an ability to speak French is helpful or necessary:

1. Interpretor, translator.

2. Customs examiner.

3. Export clerk.

4. Singer.
5. Actor, actress.
6. Teacher.
7. Stewardess, steward.
8. Travel agent.
9. Foreign diplomat, etc.

NOTE: Activities here might include writing résumés in French for these jobs and holding mock interviews. Activities could also include role playing activities where students pretend they are performing an aspect of a chosen job.

III. Resources Available through the NOW Program.

A. Que Ferai-Je Plus Tard?, Simone Monlau, Pierre Moreau, Georges Monlau, Gessler Pub. Co., 1971.

B. Duden-Francais. Mary S. Rosenberg, Inc., 100 West 72nd St., N.Y., N.Y. 10023.

Consumer and Homemaking Occupations
Hospitality and Recreation Occupations
CAREERS HELP MAKE OUR HOUSES INTO HOMES

Suggested for use in the
Seventh Grade
Homemaking Curriculum

Developed by:

Lorenza Piper
7th Grade Homemaking Teacher

In Cooperation with
the NOW Staff

INTRODUCTION

This unit may help orient your students to the objectives of the homemaking curriculum. It will also help show them the correlation of homemaking to other curriculum areas.

As each part of the home is discussed (living room, kitchen bedroom, and bathroom) the students will enjoy making a class list of all the careers they can think of that are associated with each area. In discussing the necessary skills and training for each career, other school subjects come into the picture.

Later on in the year, students may want to become more individualized in their study and explore their choice of careers in the home further.

Karen McMahon
Activities Writer

Workers Help Make Our Houses into Homes

I. Objectives

A. General objectives

1. To assist the student in becoming more familiar with the consumer and homemaking curriculum.

2. To enable the student to understand that a HOME and everything in it involves many careers related to homemaking.

3. To increase the student's awareness of the many different jobs that are needed to make a home function.

4. To help the student realize that homemaking career involve a wide range of abilities and training.

5. To increase the student's awareness of the interrelationships of various subject matter areas to homemaking careers.

6. To help the student realize that career in consumer and homemaking have dignity and worth.

B. Specific objectives

By the end of the unit activity, the student will be able to describe five careers related to each area in a home (living room or family room, kitchen or dining room, bedroom, and bathroom) with respect to:

1. The student's interests, values, and abilities.

2. The necessary skills and training required for the above jobs.

II. Activities

A. ASK THE STUDENTS TO READ POPEYE'S CONSUMER AND HOMEMAKING CAREERS. Show and discuss the filmstrip and record on home economics from the W.O.W. Series.

B. HAVE THE STUDENTS DEVELOP AND LOOK UP MEANINGS FOR THE FOLLOWING WORDS:

1. Home economics.
2. Family economics.
3. Human development.
4. Family.

5. Home management.

6. Foods, nutrition.

7. Textiles and clothing.

8. Housing and interior design.

Letter the words on spiral flip charts. Do this exercise orally with the class. As they develop meanings, write them down on the appropriate pages.

C. SHOW THE CLASS PICTURES, TRANSPARENCIES AND/OR POSTERS OF THE FOLLOWING:

1. A house and a home.
2. Living area (living or family room).
3. Kitchen area (kitchen or dining room).
4. Bedroom (teenager's or child's).
5. Bathroom.

D. CONDUCT A DISCUSSION OF EACH OF THE ABOVE INCLUDING:

1. What careers do any of these areas bring to mind?
2. What academic subjects come to mind as you think of the various occupations that are represented in these areas?
3. What homemaking subjects are involved in these areas?

E. PREPARE BULLETIN BOARDS FOR EACH HOUSE AREA. Show the careers involved, and the subjects needed for these careers (both homemaking and academic subjects). Have copies of the junior high and the vocational high school curriculums available for student reference. Include the homemaking curriculum.

F. DISPLAY THE POSTER SERIES BY LOUISE LEMMON" CAREERS IN HOME ECONOMICS." This is available through the NOW Program.

G. HAVE EACH STUDENT INDICATE TO YOU FIVE CAREERS THAT ARE NEEDED IN A HOME. Have the student indicate one career that she would like to explore further. Have the student research this career to discover necessary skills and training requirements.

H. GIVE THE STUDENTS THE OPPORTUNITY TO EXPLORE THEIR CHOICES FURTHER AS THE YEAR GOES ON. Provide them with occupational materials and emphasize the career aspects of the subject matter that will follow in the homemaking curriculum.

I. HAND THE FOLLOWING SHEET OUT TO EACH STUDENT:

Rate each activity according to the assistance it gave you in arriving at your list of careers relating to the home.

	VERY GOOD	GOOD	POOR
1. Popeye: Consumer and Homemaking Careers			
2. Transparencies, posters, pictures			
3. Looking up school curriculums			
4. Group bulletin board			
5. Home Economics record and filmstrip			
6. Posters of home economics careers			
7. Looking up home economics careers			

Use this as one measure of the effectiveness of the material used in this unit in helping the students meet unit objectives.

IV. Materials and Resources

A. Occupational information (available through the NOW Program)

1. Popeye and Consumer and Homemaking Careers.

2. World of Work Series #212-home economics filmstrip and record.

3. Posters by Louise Lemmon: "Careers in Home Economics," J. Weston Walch, Pub.

B. Helpful books

1. Teen Guide to Homemaking, Barclay, McGraw-Hill Book Co., 1972.

C. Curriculum guides

D. The NOW Program's "Resource Center" has a variety of audio-visual materials and equipment that you may use Our Resource Center is located at Lewiston Comprehensive High School.

HOME ECONOMICS

Good Grooming and Personal Services Careers

I. Objectives

   A. General objectives

      1. To encourage boys and girls to develop good grooming and poise.

      2. To provide the student with ways to develop good grooming and poise

      3. To introduce the student to the personal services careers that can help develop good grooming and poise.

      4. To enable the student to realize that personal services careers have dignity and worth.

   B. Specific objectives

      1. By the end of the course study, the student will be able to name six careers that are considered to be personal services.

      2. The student will be able to describe the job function, skills, abilities, interests, an advantage and a disadvantage, the job outlook, education/training requirements, and expected salary for each of the above occupations.

      3. The student will be able to choose a personal services career that he/she is interested in and role play a function of that job.

II. Scope and Sequence

   A. Introduction

      1. Good grooming for young adults.

      2. Careers involved with personal services:

         a. Cobbler.

         b. Manicurist.

         c. Make-up artist.

         d. Hair stylist.

e. Wig stylist.

f. Health club workers, instructors.

g. Model.

h. Clothing designer.

i Shoe shiner.

j. Barber.

k. Beautician.

l. Karate expert.

m. Physical trainer.

n. Masseur, masseuse.

o. Chauffeur.

p. Housecleaner.

q. Laundry personnel.

r. Butler.

s. Maid.

t. Cook.

u. Gardener.

v. Waiter, waitress.

w. Host, hostess.

Suggested N.O.W. Resources:
Your Future in Beauty Culture.
Your Future in the Beauty Business.
Your Future as a Dietician.

SRA-Career Information Kit.
SRA-Occupational Exploration Kit.
Finney's-Finding Your Job.
Interview Cassettes.
Career Monographs.

B. Independent research

1. Ask students to research six personal services occupations according to the criteria set in specific objectives 2. They may use the resources listed above.

2. Arrange for the students to visit local businesses that employ personal services occupations. Prepare your students for the trips with occupational information and audio-visual aids. Ask each to think of several questions to ask about the kind of work at the business.

3. If excursions are not possible, resource persons may be available to come into the classroom. Prepare your students to ask questions about the resource person's job. The resource person may be able to give a demonstration of skills needed for the job.

4. Integrate your regular program on personal grooming with this career area during the independent research.

C. Concluding activities

1. Ask students to choose one career in personal services that interests him/her most.

2. Ask them to plan a role playing activity that is representative of the type of work they chose.

3. Allow students to participate in a shadow experience with local people who work in the personal services career cluster.

Home Economics

CHILD CARE

I. Objectives

A. General objectives

1. To introduce the student to the responsibilities of a day care center worker.
2. To give the student the opportunity to work with small children.
3. To give the student the opportunity to use interpersonal relationship skills.
4. To introduce the student to the child development process.
5. To introduce the student to the physical and emotional needs of the young child.

B. Specific objectives

1. By the end of the course study, the student will be able to tell the difference between physical and emotional needs of the young child.
2. The student will be able to identify the characteristics a child displays when physical needs are not met.
3. The student will be able to describe the physical characteristics and special problems of a given age group.
4. The student will be able to list and describe the three ways that children learn.
5. The student will be able to make a good toy for small children given three criteria.
6. The student will be able to develop four different kinds of learning activities that will motivate small children: a reading, an art, a music, and a play activity.
7. The student will be able to guide and supervise a group of small children in one of the above activities.
8. The student will be able to demonstrate his (her) ability to handle common discipline problems when dealing with a group of small children.

CHILD CARE

II. Scope and Sequence

A. Course introduction

1. What is child care?

2. What are the responsibilities of the child care center worker?

3. What does the child care center worker need to know about the small child?

    a. Physical needs.

    b. Emotional needs.

    c. The child development process.

    d. Activities that motivate young children.

    e. Discipline.

    f. Interpersonal relationship skills.

SUGGESTED NOW RESOURCES: Babysitting, Interpersonal Relationships--Guidance Associates.

Foods as Children See It--General Mills.

Discipline and Punishment
Intellectual Development --NASCO Co.

B. Resource persons and child care experience

1. A visit to a local child care center.

2. Resource persons.

    a. Child care center workers.

    b. Social workers.

    c. Child psychologist.

3. Class sets up their own play school.

    a. Reading center.

    b. Blocks.

c. Music center.

d. Art center.

e. Playhouse

f. Table toys area.

4. Local children come to the center so the students may gain experience in dealing with small children

5. Students develop and supervise activities for the play school.

Home Economics

HUMAN RELATIONS

I. Objectives

A. General objectives

1. To introduce the student to the occupations which require a great understanding of human relations.

2. To show the correlation of human relations to all kinds of work.

3. To encourage the student to handle home, school, and friend relationships with understanding, honesty, and sensitivity.

4. To help the student understand some common problems of adolescence.

B. Specific objectives

1. By the end of the course study, the student will be able to describe three ways that human relations correlate with the world of work.

2. The student will be able to name at least ten occupations from three occupational areas (health and mental health occupations, social service occupations, and child care and education occupations) that require a great understanding of human relations.

3. The student will be able to describe one reason why human relations are very important in each of the ten above occupations.

II. Scope and Sequence

A. Introduction-the role of human relations in our every day living

1. At home

2. At school

3. With friends

4. In the world of work

a. Health and mental health occupations

b. Social service occupations

c. Child care

d. Education

e. Correlation with all career areas

B. Human relations at home

1. The things children and parents have in common

2. Where they differ

3. How greater understanding can be attained

SUGGESTED NOW RESOURCES: The Tuned-Out Generation, Understanding Your Parents, The Adolescent Experience: Interpersonal Relationships--Guidance Associates.

A local child and family health services bureau may help in providing you with qualified resource persons.

C. Human relations at school

1. Relationships to other students

a. In the classroom

b. In extracurricular activities

2. Relationships with teachers

SUGGESTED NOW RESOURCES: Somebody's Cheating--Guidance Assoc.
Education--Tapes Unlimited

D. Human relationships with friends inside and outside of school

1. What is a friend?

2. Boyfriend or boy friend?

SUGGESTED NOW RESOURCES: Beginning to Date, VD: What You Should Know, Personal Commitment: Where Do You Stand?, Masculinity and Femininity, Your Personality: The You Others Know, High on Life--Guidance Associates

Your guidance department may want to take an active role in some of these group discussions.

E. Human relations in the world of work

1. Occupations involved in the human relations previously discussed
2. Job attitudes and human relations

SUGGESTED NOW RESOURCES: People Who Help Others, Babysitting, What You Should Know Before You Go to Work, Liking Your Job and Your Life, Job Attitudes: Trouble at Work--Guidance Associates

Compassion for People--Bowmar Kit

SRA Occupational Exploration Kit

Career Opportunities in Health-Book

Counselor-Interview Cassette
Education-Tapes Unlimited
Health Services-Tapes Unlimited
Social Worker-Interview Cassette

Community resources in the areas of health, mental health, and social services can provide additional career information.

Consumer and Homemaking Occupations

Fine Arts and Humanities Occupations

INTERIOR DESIGN

Suggested for use in grades 8-9
for Home Economics Classes *

Developed by:

Sherman Kendall
Grade 7 Art Teacher

In cooperation with
the N.O.W. Staff

*This may be of interest to art
and mathematics teachers, too.

INTRODUCTION

Although these activities are suggested for use in home economics classes, interested teachers in other subject areas such as art and mathematics may find the unit very suitable for their classes, also.

The activities are individualized and require each student to identify problem areas in their bedroom (or another family room) and solve the problem areas by using scale drawings and models.

Occupations play an important part in the activities. Students not only find out about interior design and decorating, but they also discover the correlation of such careers as cabinet maker, furniture maker, wallpaper hanger, and painter to this general area of work.

This package also introduces the student to local businesses that can supply interior decorating needs. This is of use to the student who may someday decorate a home of his own.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Interior Design

I. Objectives

A. General objectives

1. To introduce the student to an area of skills and occupations which he may use, although he may not desire to become an interior designer.

2. To allow the student to evaluate his skills and interests as related to an occupation which requires imagination, creativity, as well as post-high school training.

3. To introduce the student to fields related to interior design including furniture making, drapery and window treatment, and methods of floor covering.

4. To integrate other subject areas such as communication skills, art, and simple mathematics (proportion, ratios, and measurement) with the activities in this unit.

B. Specific objectives

1. By the end of the unit study, the student will be able to recognize, explain, and diagram five common symbols found on a blueprint.

2. The student will be able to draw the proportions of a room to scale.

3. Given a floor plan, the student will be able to recognize and evaluate the various areas of a bedroom that an interior decorator must consider: lighting, storage, window treatment, activities, traffic pattern, furniture, and heating.

4. The student will be able to name one local retail supplier for each of the following products: furniture, drapery, window treatment, lighting, floor covering, wallpaper supplies, and paint supplies.

5. The student will be able to identify the art principles that an interior decorator must be knowledgeable in: color compatability, proportion, texture, lighting, placement, and mood.

II. Activities

A. ASK YOUR STUDENTS TO GO HOME AND CLOSELY EXAMINE THEIR BEDROOMS (OR OTHER FAMILY ROOM).

1. What is the main purpose of this room? Is it well located for this purpose? Is it quiet or noisey?

2. What rooms is this room located next to?

3. Does the room have any storage space? Is the closet large enough for the room's purposes? Is there enough room for the room's purposes? Is there room for bookshelves or storage along the walls?

4. Is the present furniture comfortable for the room's activities? What kind of condition is the furniture in? What kind of condition are the walls and woodwork in?

5. Is the lighting adequate for the room's purposes? What parts of the room receive the most light for activities? What areas are darkest during the day?

6. What areas of the room get the heaviest traffic? Do the floors look better or worse for the wear? What other types of flooring could you use in this particular room?

7. What colors have been used in this room? Are they pleasing to your eye? Are the colors coordinated? Do the colors fit the mood that the room should convey?

8. What areas would you like to change if your resources were unlimited? What would these changes be?

9. Why would you change these areas? Does your family feel the same way about this as you do?

B. SUPPLY YOUR STUDENTS WITH REFERENCE INFORMATION ON INTERIOR DESIGN. Attractively display these materials on tables and bulletin boards.

C. HAVE THE STUDENTS MEASURE THE LENGTH AND WIDTH OF THE CLASSROOM. Have them measure the windows for size and placement and hinge arrangement of the doors. Record these measurements and instruct the students on the board how to make a scale drawing of the room.

D. HAVE THE STUDENTS TAKE THE SAME MEASUREMENTS FOR THEIR BEDROOM OR OTHER FAMILY ROOM. As a class activity have them convert these measurements onto a scale floor plan of their chosen room. Ask them to include doors, windows, built-in furniture, and closets. Have them do the scale drawing on a 12"X18" drawing paper. Introduce the symbols found on a floor plan. (Refer to Inserts1 and 2)

E. BRING IN FLOOR PLANS OF OTHER HOUSES. Have the class examine them for symbols and abbreviations. Make available a mimeographed sheet of the most common symbols and abbreviations. (Insert 1)

F. ASK THE STUDENTS TO TAKE THEIR ORIGINAL FLOOR PLAN HOME AND STUDY THE FURNITURE IN THEIR ROOMS. Have the students get the approximate measurements of all furniture in the room including rugs and wall hangings. Ask them to place these on the floor plan in their location in the room.

G. ON A SEPARATE SHEET OF PAPER HAVE THE STUDENTS REDRAW TO SCALE ALL OF THE FURNITURE. Have them cut their furniture out and place it on the scale drawings. (Have the students either place and not glue the furniture, or have them spread a thin layer of rubber cement on the scale drawing of the furniture so that the piece may be peeled off and placed elsewhere.)

H. ASK THEM TO SELECT AN AREA WHICH THEY FEEL NEEDS IMPROVEMENT. In analyzing the problem area the students should consider the following questions:

1. What is the problem area?
2. Why is this the area? Would a new arrangement of furniture help?
3. Have you outgrown the decorating scheme?
4. Are you bored of the decorating scheme?

I. THE STUDENTS SHOULD NOW CONSIDER THE VARIOUS METHODS OF SOLVING THE PROBLEM AREAS. They must consider the amount of available money. They must consider available resources for help in painting and refinishing. Are there alternatives? Is new furniture necessary?

J. ASK THE STUDENTS TO ASSUME THE ROLE OF AN INTERIOR DECORATOR Tell them that they must go out into the community to see what resources are available for furniture, drapery-window treatment, lighting, floor covering, wallpaper supplies, and paint supplies. Prepare a list of local resource persons and companies that the students may refer to. Ask them to pay special attention to the resources that apply to the problem area. Provide a format similar to insert 3 for them to fill out concerning outside resources and the problem areas.

K. ASK THE STUDENTS FOR A FINAL DECISION FOR THE SOLUTION TO THE DECORATING PROBLEM. Ask them to show the solution on their floor plan, detailing selection of colors, lighting, drapery, and furnishings. (Either by descriptions or actual samples.)

L. FOR THE HIGHLY MOTIVATED STUDENT, THE NEXT STEP IS A THREE-DIMENSIONAL CONSTRUCTION OF THE ROOM AS HE WOULD LIKE TO SEE IT. Using heavy chipboard or cardboard the student may construct a scale model. . . This will include openings for doors and windows. He may also construct furniture, drapery, and rugs using small pieces of fabric and wood. This activity is for the most interested student as the activity takes a long time to complete.

M. YOU MIGHT CONSIDER THE FOLLOWING ACTIVITIES AS A UNIT FOLLOW-UP:

1. Give the students an opportunity to talk to an interior decorator. Go on a field trip or ask a resource person to come into the classroom to give your students this opportunity.

2. Give your students an opportunity to see someone that deals with interior decorating who isn't an interior decorator, i.e. cabinetmaker, furniture maker, wallpaper hanger, painter, etc.

3. Give the students an opportunity to see a house under construction, or allow them to go to an open house.

4. Take the class to see an apartment house or a large business where interior decorators have been at work.

5. Take the class to visit a local supplier-furniture store, carpet layer, or manufacturer.

N. ASK SOME OF YOUR STUDENTS TO SOLVE SOME OF THE FOLLOWING PROBLEMS BASED ON A HYPOTHETICAL SITUATION. Mr. Gregg is the interior decorator.

1. A Mr. and Mrs. Babcock approach the interior decorator. They want to redecorate their daughters' bedroom. The two girls are ten and thirteen years old. They present

the interior decorator with a floor plan of the bedroom and explain that they are limited by a budget of $300.00. They would like to use the existing furniture which includes: twin beds, two matching bureaus and two chairs.

What solutions to the problem can you think of?

What areas need the most concentration?

What can be done to give the sisters some privacy?

2. Mr. and Mrs. Hopkins request the services of the interior decorator to furnish a nursery for an expected baby.

   What color schemes, wall coverings, furniture, floor covering, and drapery materials should you use in an infant's room? Are they the same things that you might find in an older child's room? What are the most important things to consider?

   Can you help Mr. Gregg? Does the room size matter?

3. Mrs. Clements approaches the interior decorator about home ideas and perhaps new furniture for her third bedroom. Her children have grown up and she has no need for three bedrooms for herself and her husband. She would like to convert the extra bedroom into a den, but she would still like to be able to use it as a bedroom when her family comes to visit.

   What type of furniture, color schemes, drapery, and floor covering would be appropriate for a bedroom-den? Do you need to have a bed in the den? What else could you use? Would a TV set be appropriate? How about bookshelves? Can you give Mr. Gregg any suggestions that might help? Consider the age of his client.

EVALUATION

III.

A. Student observation

1. Did the student show an interest in the field of interior design and decoration?
2. How was this interest maintained?
3. How did the student use his abilities in the field of art?
4. What related fields did the student show an interest in?
5. How successful was the student in completing each of the activities?
6. How did the student recognize and evaluate his own performance?
7. Was the student satisfied or pleased with his accomplishments?

B. Evaluation measures for the teachers

1. To what extent did the activities meet the objectives?
2. What might be changed to improve the effectiveness of my activities?
3. How effective were the materials and information in helping the students meet the unit objectives?

IV. Materials and Resources

A. The teacher should have available to the student as many of the following materials as possible:

1. Wallpaper sample books (out of date ones are free from a retail supplier).
2. Carpet and linoleum samples (extra pieces are available from a supplier).
3. Paint charts (available at any paint supplier).
4. Pamplets on furniture can be obtained from the furniture manufacturers.

5. Pamplets on paneling, various types of suspended ceilings, windows, and other building materials available from the local lumber yards.

6. Blueprints for the students to examine can be found in Better Homes and Garden and House and Garden. They may also be obtained from: New England Homes and Westville Homes by writing to the manufacturer.

B. The N.O.W. Program has an extensive array of audio-visual materials and equipment that are available to you at your request from our "Resource Center" at Lewiston Comprehensive High School:

1. Tape recorders, tapes, microphones.
2. Video-tape recording equipment.
3. Cameras, films, flash bulbs.
4. Projectors, screens.

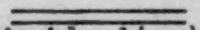
C. N.O.W. materials:

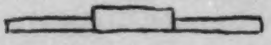
Your Future in Interior Design, ARCO Press.

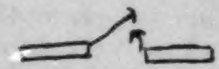
INSERT 1

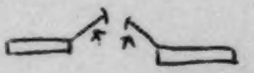
SYMBOLS FOUND IN A BLUEPRINT

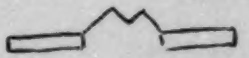
one foot=1'
one inch=1"

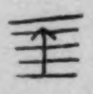
walls 
(double line)

window 

single doors 

double doors 

folding doors 

stairs 

(arrow shows direction)

ABBREVIATIONS

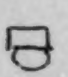
CL=closet

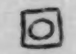
BR=bedroom

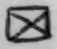
LR= livingroom

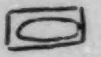
BATH=bathroom

BATHROOM SYMBOLS

 toilet

 sink

 shower

 tub

INSERT 2

name

date class

The student will measure the width and length of the room in feet and inches to be written as feet ' and inches " .

The student will place doors and windows in the correct location. These will also be measured and recorded in feet and inches.

All closets or build-in furniture should also be measured and included as it exists.

INSERT 3

____
name

____
date class

1. Room: ____________

2. Floor covering
   local supplies: ____________
   type: ____________
   color: ____________
   cost: ____________

3. Walls
   paint color: ____________
   brand: ____________
   cost: ____________
   local retailer: ____________
   wallpaper: ____________
   colors: ____________
   cost: ____________
   local retailer: ____________

4. Windows
   drapery: ____________
   colors: ____________
   fabric cost: ____________
   available at: ____________
   window shades: ____________
   cost: ____________
   colors: ____________
   available at: ____________

5. Furniture
   style: ____________
   colors: ____________
   manufacturer: ____________
   cost: ____________
   do it yourself: ____________

6. Lighting
   style: ____________
   moveable as furniture: ____________
   in ceiling: ____________

7. The problem area to be solved was: ______________________________

8. Alternatives: ______________________________

9. The final solution was: ______________________________

INDUSTRIAL ARTS

Modular Programming with a VTR for Industrial Arts

I. Objectives

A. General objectives

1. To facilitate the industrial arts teacher in individualizing instruction.

2. To provide the student with the following occupational information about industry in Lewiston:

   a. What jobs are there in the area that are relative to the industrial arts programs at Lewiston Junior High School?

   b. What do these workers do on their jobs?

   c. What is the general salary for these kinds of jobs?

   d. What education and/or training is required?

   e. What abilities, skills, and interests are required?

   f. What advantages and disadvantages are there to these jobs?

   g. What is the job outlook?

3. To expose groups of students to the parts, function, and operation of industrial arts tools and machinery more efficiently by the use of video-tapes and instructional packages.

B. Specific objectives

1. By the end of the program, the student will be able to name at least five job opportunities in the local area that are related to his industrial arts program of study.

2. The student will be able to describe to his own satisfaction what these workers do on their jobs, general salary, education and/or training requirements, necessary skills, abilities, and interests, and the advantages and disadvantages for these five jobs.

3. The student will be able to describe the part and function of a given industrial arts tool or piece of machinery after receiving instruction concerning the parts and function by means of video-tape, instructional package, and classroom teacher.

4. The student will be able to demonstrate the operation of a given industrial arts tool or piece of machinery after receiving instruction concerning the operation by means of video-tape, instructional package, and classroom teacher.

II. Scope and Sequence (Teacher's guide for developing and implementing modular programming)

A. Occupational information about industry in Lewiston:

1. Make an industrial survey to find out which local companies employ people with industrial arts skills.

2. Make a resource list from this information.

3. Identify specific jobs in each company that require I.A. Skills.

4. Have students conduct interviews with persons holding the specific jobs as identified in 3. above to find out the following information:

   a. What the worker does on the job.
   b. Salary.
   c. Required education and/or training.
   d. Necessary skills, abilities, and interests.
   e. Advantages and disadvantages to this kind of work.
   f. The job outlook.

5. Video-tape these interviews.

6. Use these interviews in your program of study to supplement existing occupational information.

B. Instructional use of the VTR in demonstrating tool and machinery parts, function, and operation:

1. Identify specific areas in your curriculum concerning tool and machinery parts, function, and operation that would best be demonstrated via the VTR.

2. Make a list of these curriculum modules.

3. Write accompanying information packages for each curriculum module that describe instructional outcomes, and an outline of the information offered.

4. Use the information package as a basis for your demonstration of the tool or machine.

5. Demonstrate the parts, function, and operation of the tool or machine. Give each student a copy of the information package. Video-tape record your demonstration.

6. Save the tape for review, for students who missed the instruction, and for an instructional module for future classes.

7. Use the information package as an adjunct to the taped demonstration.

SUGGESTED NOW RESOURCES: VTR System: deck, camera, tripod,
VTR Moniter

INDUSTRIAL ARTS

Corporate Structure and Industrial Arts

I. Objectives

A. General objectives

1. To encourage the student to participate in group and individual efforts.

2. To introduce the student to the role of corporate structure in supplying the demands of a consumer society.

3. To increase the student's awareness of worker interdependency.

4. To familiarize the student with the structure of a corporation.

5. To give the student a chance to see a product to its completion.

B. Specific objectives

1. By the end of the program activity, the student will be able to perform the job duties of five workers within the corporate structure to his own satisfaction in a mock corporate structure.

2. The student will be able to describe the job function, the education/training requirements, a job advantage and a disadvantage, necessary skills, abilities, and interests, and the relation of the worker to others in the corporate structure for each of the five above occupations.

3. The student will be able to demonstrate the use of a given tool or piece of machinery that is necessary for the manufacture of the corporate structure's product.

II. Scope and Sequence

A. Introduction

1. Show students what a corporate structure is. (Refer to Insert 1)

2. Show students some products they can make while the classroom functions as a corporate structure.

3. Decide what products the corporate structure will make.

4. Discuss products in relation to the corporate structure:

    a. Supply and demand.

    b. Necessary steps to make the product (pricing materials, selling stock, designing, and production, etc.)

B. Class activity

1. Instruct students on the use of the tools and machinery necessary to make the product.

2. Set-up the corporate structure with the students as its members. (Inserts 2 & 3)

3. Have students change work roles until everybody has had the chance to perform the job duties of at least five workers.

4. As students role play each worker, have them investigate further the job function, education/training requirements, job advantages and disadvantages, necessary skills, abilities, and interests, and the relation of that worker to others in the corporate structure.

5. Interview students to determine their orientation to these workers.

C. Concluding activities:

1. Complete corporate structure products.

2. Sell products to replenish materials and supplies.

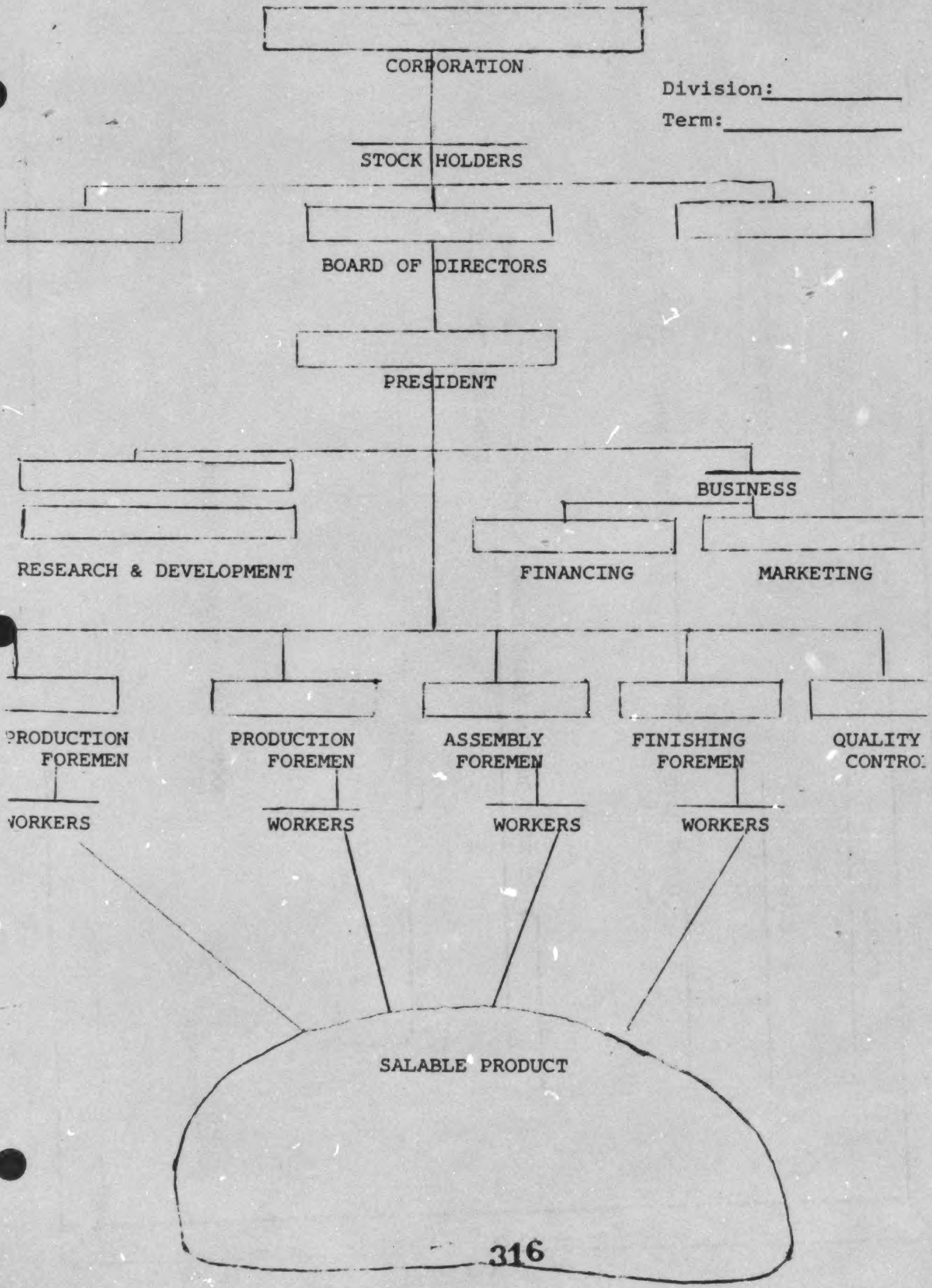
3. Discuss profits in relation to stockholders.

Suggested NOW Resources: Finney's-Finding Your Job.
Occupational Outlook Handbook.
Career Monographs.
SRA-Career Information Kit.

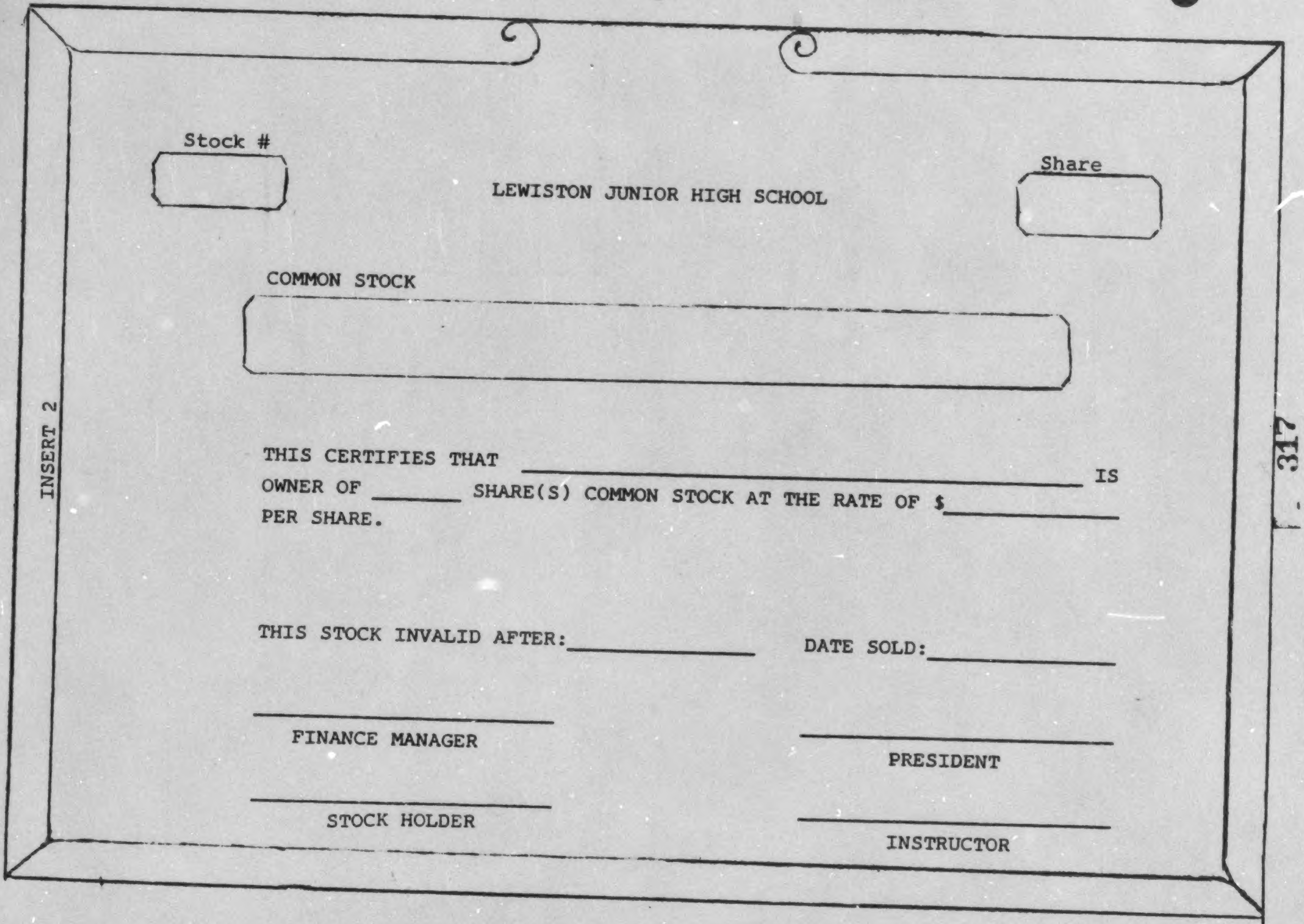
INSERT I

Division: ____________

Term: ____________


CORPORATION
STOCK HOLDERS
BOARD OF DIRECTORS
PRESIDENT
RESEARCH & DEVELOPMENT
BUSINESS
FINANCING
MARKETING
PRODUCTION FOREMEN
PRODUCTION FOREMEN
ASSEMBLY FOREMEN
FINISHING FOREMEN
QUALITY CONTRO
WORKERS
WORKERS
WORKERS
WORKERS
SALABLE PRODUCT

INSERT 2



Stock #

Share

LEWISTON JUNIOR HIGH SCHOOL

COMMON STOCK

THIS CERTIFIES THAT ______________________________ IS OWNER OF _____ SHARE(S) COMMON STOCK AT THE RATE OF $__________ PER SHARE.

THIS STOCK INVALID AFTER:__________ DATE SOLD:__________

FINANCE MANAGER

PRESIDENT

STOCK HOLDER

INSTRUCTOR

INSERT 3

LIST OF STOCK HOLDERS

DIVISION:__________ TERM:__________ CORP. NAME:____________________

FINANCING MANAGER:_________________________

NAME	# OF SHARES	COST PER SHARE	TOTAL COST

STOCK INTENSIONS:

NUMBER OF PRODUCTS TO BE SOLD:______________________________

NUMBER OF PRODUCTS TO BE KEPT:______________________________

Fine Arts and Humanities Occupations

ART IN ADVERTISING

Suggested for use in
Junior High Art Classes

Developed by:

Joan Flynt
Art Teacher

In cooperation with
the N.O.W. Staff

Introduction

The application of careers to art can help develop any art curriculum. Career education in art can encourage the art student to use art skills and concepts in work-life situation beyond the school environment. For the student who is artistically talented, career education in art can make the difference between occupational disappointment and occupational fulfillment.

There is a place for the artist in the working world. The artistically inclined are in all areas of advertising, for example. A more sophisticated public has learned to ignore and distrust the great wave of unartistic and gaudy advertising that has exploded into all media areas in the past. Advertising has, in fact, become an art form.

This unit may help you orient your students to the concept of art in advertising. As an artist, you may feel confined by the academics of the unit approach. Your own sensibilities can be your guide. Cull out what you cannot use. Implement, improve, and add activities according to the needs of the individuals in your classroom.

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

Art in Advertising

I. Objectives

A. General objectives

1. To introduce the student to the role of art in contemporary advertising.

2. To inform the student of the work roles of the artist in advertising.

3. To encourage the application of artistic skills and appreciations to display techniques in advertising.

4. To introduce the student to the various forms of advertising.

B. Specific objectives

1. By the end of the unit study, the student will be able to name three careers associated with advertising and art.

2. The student will be able to describe the job function, advantages, disadvantages, interests, skills, abilities, education and training requirements, job outlook, and expected salary for each of the three above occupations.

3. The student will be able to compose and draw a two-dimensional advertising poster using the nine elements of a successful display and one advertising approach.

4. The student will be able to demonstrate his knowledge of five advertising approaches.

5. The student will be able to compose a 3-D advertising display using the nine elements of a successful display and at least one advertising approach.

II. Activities

A. INTRODUCE YOUR STUDENTS TO THE ARTISTIC ELEMENTS AND APPROACHES IN ADVERTISING. Ask the students to bring in newspaper and magazine advertising clippings before you conduct your discussion. Use the clippings as examples.

1. Artistic elements that contribute to a successful display:
    - a. Color.
    - b. Line-point.
    - c. Shape.
    - d. Composition.
    - e. Clash-harmony.
    - f. Direction-movement.
    - g. Balance-size.
    - h. Variety.
    - i. Elegance.

2. Advertising approaches:
    1. Famous person approach (If Bobby Orr likes it, you'll like it).
    2. The "Best and Greatest" approach.
    3. The economical approach (more for your money).
    4. The popularity approach (everybody wants one...).
    5. The masculine or feminine image approach.
    6. The special offer approach (one time only).

B. ASK YOUR STUDENTS TO MAKE AN ADVERTISING DISPLAY POSTER. Discuss these displays in relation to the nine artistic elements and the six advertising approaches.

C. INTRODUCE YOUR STUDENTS TO OCCUPATIONS IN ADVERTISING THAT REQUIRE ARTISTIC SKILLS. Make occupational information available so that each student may research three occupations to find out the job function, advantages and disadvantages, interests, skills, abilities, education and training requirements, job outlook, and expected salary for each. Refer to IV. Materials and Resources for information sources.

D. OCCUPATIONS IN ADVERTISING:

1. Display workers.
2. Commercial artist--design, layout, composition.
    - a. Newspapers.
    - b. Magazines.
    - c. Posters.
    - d. Pamphlets and leaflets
3. Graphic artist--design, layout, composition (a.-d. above).

E. INTERESTED STUDENTS MAY WANT TO VISIT A PRINT OR COMPOSITON SHOP. Here, the students may discover the occupations and techniques involved in graphic arts. Much printed matter is actually in the form of advertising. Students may want to ask what percentage of the jobs in the shop are advertising, and what kinds of advertising are most frequently printed. Job facts such as salary, training, outlook, advantages, and disadvantages may also be of interest.

F. ARRANGE AN EXCURSION TO A LOCAL DEPARTMENT STORE. Make your arrangements with the person who is responsible for advertising so that he may highlight the tour with the advertising techniques used. Prepare your students to ask questions concerning the jobs involved in advertising in that store. Ask your students to note and evaluate the artistic elements and approaches used at the store. Note three-dimensional as well as poster displays. Ask your students to write a thank-you note.

G. DIVIDE THE CLASS INTO GROUPS TO MAKE THREE-DIMENSIONAL DISPLAYS. Ask the groups to decide what they will advertise. Group members can procure the articles, and make their displays. Make-out an evaluation sheet so the students can evaluate each display for effectiveness in using artistic elements and advertising approaches. (Refer to Insert 1).

H. ASK YOUR STUDENTS TO GIVE THEIR REPORTS ON THREE OCCUPATIONS IN ADVERTISING THAT USE ARTISTIC SKILLS. Take this opportunity to review unit material.

III. Evaluation

A. Check each student for completion of unit projects.

B. Check with specific objectives to see if unit projects satisfied the criteria set in the objectives.

C. Evaluate how successful the unit activities were in motivating students to meet unit objectives.

IV. Materials and Resourses

A. Materials to have around:

1. Poster paper.

2. Felt markers, pens, paints, crayons, ink.

3. Glue.

4. Construction paper.

5. Scissors.
6. Magazines.
7. Articles for ad displays.
8. Small boxes.
9. Drapery material.

B. Occupational information sources:

1. Occupational Outlook Handbook.
2. SRA Career Information Kit.
3. Finney's - Finding Your Job.
4. Career Monographs.

INSERT 1

Three Dimensional Display

Evaluation Form

Student's name:__________________

Group:__________________

Advertised products:____

I.	Use of artistic elements:	Excellent	Good	Fair	Poor (circle one)
	1. Color	4	3	2	1
	2. Line - point	4	3	2	1
	3. Shape	4	3	2	1
	4. Composition	4	3	2	1
	5. Harmony	4	3	2	1
	6. Direction - movement	4	3	2	1
	7. Balance	4	3	2	1
	8. Variety	4	3	2	1
	9. Elegance	4	3	2	1
II.	Advertising Approach:____				
	How effectively did the group use this approach?	4	3	2	1
III.	Overall rating:	4	3	2	1

Give a general statement of your reasons for your overall rating:

____

____

____

____

PRE- AND POST-TESTING

Evaluation Techniques to Determine Career Awareness in the Elementary Student

I. Testing non-readers and writers for career awareness requires innovation on the part of the teacher. Students often understand more than they can verbalize or write. A student's aversion to testing may be based on lack of reading and writing skills, if such testing has too frequently required the use of these skills.

Pictures can be a very effective means to determine career awareness in students who have lower reading levels. There are two methods that are commonly used with non-readers to determine growth that could be a result of a career education activity:

A. Present your students before and after the activity with various visual stimuli that are representative of the group of workers you will take up. These might include:

1. Numbered pictures of workers performing job duties.
2. Numbered or lettered pictures of tools machines, and/or people that are commonly associated with these workers.

Simple matching and identification exercises can reveal growth in career awareness. Also, since concepts are largely formed by the association of facts, you may be able to determine from the students' abilities to identify and match workers, jobs, tools, and people that the students have the basis for or have formed such concepts as: specialization creates interdependency; work and education are interrelated, etc.

SAMPLE QUESTIONS:

1. Write down the number of the picture that has a pharmacist in it.
2. Write down the numbers of the pictures that have hospital workers in them.
3. Match the right tools with the right workers.

B. Ask your students to draw a picture or pictures before and after the activity that will represent the workers they will study. Compare pre- and post-activity results. Drawings might include:

1. Workers in a given group performing job duties and interacting with other workers.

2. Tools, machinery, and other accountrements associated with the workers studied.

II. Testing readers is a more direct process. Your test may require short answer, multiple choice, and matching exercises. Combining these traditional techniques with some of the above techniques provides a more motivating procedure. In some classrooms students may be of a significantly lower reading level than the rest of the class. In these cases, structure the test so that as little reading or writing is needed as possible, or provide enough flexibility in selected test questions so that the student with a lower reading level may either write or draw his response. The following areas are the most pertinent for grades 3-6 since this knowledge indicates to one degree or another the growth of career awareness into orientation in the higher level student:

1. The kinds of jobs included in the chosen occupational area.

2. What these workers do on the job.

3. Basic education and training requirements. (high school, on-the-job, 2-year technical, college)

4. Tools, machines, and other accoutrements.

5. Necessary skills, abilities, and interests.

6. Job advantages and disadvantages.

III. A third way to pre- and post-test students is to design a role-playing activity dealing with the group of workers you will take-up. Provide a hypothetical work situation before and after you study these workers. Compare the results. This kind of evaluation is best done with very young students, or with students who are accustomed to acting maturely in role-playing activities.

SOME TESTING PROCEDURES

I. Pre- and post-testing puts more responsibility on the teacher than the student in the following areas:

A. Was the activity suitable for the students' developmental levels?

1. Did pre- and post-test results show a significant increase in awareness as a result of the activity?

Pre-test	Post-test	Sign
-	+	+

2. Did the pre-post-test results show a decrease in awareness as a result of the activity?

Pre-test	Post-test	Sign
+	-	-

3. Did the pre- post-test results show no difference in awareness as a result of the activity?

a. The student was not aware before or after the activity.

Pre-test	Post-test	Sign
-	-	0

b. The student was aware before and after the activity.

Pre-test	Post-test	Sign
+	+	0

B. Were the teaching methods, materials, and resources used effective? (refer I., A., 1.-3.)

II. Accepting this responsibility relieves the student from the burden of "testing," and yet, it allows measurement in growth to take place. The following are some ways to help students respond comfortably to such measurement:

A. Remove the word "test" from your vocabulary. You might call the procedure an activity, a measure, or evaluation. To tell students before pre-test administration that it's just a little test, but it doesn't really count, so don't worry about it is a contradiction in terms. Explaining the purpose of the procedure may be more effective. To explain it in terms of physical growth is usually understandable to the youngest students.

Example:

> "Do you remember when the teacher weighed you and measured how tall you were last year? This year I weighed and measured you, too. Many of you have grown a lot. The way I found this out was when I looked at how much you weighed and how tall you were last year, you weighed less, and you were shorter. We're going to do pretty much the same thing now. We're going to find out how much you know now about hospital workers, so that later we can see if you know more."

B. Personalize the test as much as possible. Ask your students to indicate which workers and tools they'd like to know more about or they like best. Ask them to draw or color their own pictures. Role-playing is a highly personalized method.

III. Be sure to use the information that is required to show growth in the occupational cluster that will be studied, but do not use the test itself or actual items from the test as a means of acquiring this knowledge until you will post-test the students. Otherwise, the measure will not be a valid indication of growth.

A. Before you make the instrument identify specific, performance-oriented, behavorial objectives that will pin-down the information and/or skills that will result from the implementation of the activity.

B. Make the instrument keeping the above objectives in mind.

C. Pre-test the students with the instrument.

D. Implement the activities that will aid the students in meeting the above objectives.

E. Post-test the students with the instrument.

F. Compare pre- post-test results.

EVALUATING A CAREER EDUCATION LEARNING PACKAGE FOR SECOND GRADERS

Karen McMahon
Activities Writer
N.O.W. Exemplary Program

In Conjunction with a
Unit on Health Careers

Developed by:
Anne Cheney
Grade 2 Teacher

Abstract

This paper is a result of a study done on the effectiveness of a career education learning package in helping second graders increase their awareness about health careers. A ten picture pre- and post-test instrument was developed to determine this.

The measure was a three part test:

1. The students identified which of the workers presented on the ten picture cards were involved in the work force of a hospital on the pre- and post-tests.
2. The students identified the visual image of each worker by picture number when given the job title of each on the pre- and post-tests.
3. The students identified two workers by picture number that they would like to know more about. The subjects' abilities to identify these pictures were compared on the pre- and post-tests. The assumption was that the learning activity would increase the subjects' abilities to identify their choices.

Evaluating a Career Education Learning Package for Second Graders

The New Opportunities for Work Exemplary Career Education Program (N.O.W.) began in Lewiston, Maine in the fall of 1970. During the growth of the program, many teachers employed the services of N.O.W. Career Education Specialists to show them how to integrate career education information, materials, and resources into the ongoing curriculum. This was accomplished through inservice teacher training programs and individual conferences.

The N.O.W. Staff conducted one inservice teacher training program specifically for the purpose of developing career education learning packages. Teachers wrote objectives and sequenced career education activities with classroom activities. They were also given the opportunity to develop audio-visual aids and to order materials pertinent to their packages.

The teachers implemented their learning packages during the following school year. Evaluation was a part of the implementation.

One of the participants, a second grade teacher, developed a unit on health careers for her class. Activities included visits from the school nurse and student nurses at a local hospital, role-playing activities, work sheets on hospital workers, and the use of audio-visuals pertaining to health careers.

The N.O.W. Staff and the teacher involved decided to evaluate the package in an effort to answer the following questions:

1. How effective was the learning package in helping the teacher present the material to second grade students?
2. How effective were the materials and resources in acheiving the desired amount of career awareness among the students?
3. How effective were the teaching methods employed during the activity?

Instrumentation

Since elementary level career education activities are intended to increase the student's occupational awareness(1) in a given area, the N.O.W. Staff Activities Writer developed a ten item pre- and post-test instrument that could determine this for health careers and would not be influenced by the reading levels of second grade students. The ten item instrument consisted uniformly articulated, brightly colored cartoons of hospital workers performing various job functions. These included: 1) Nurse's aid 2) Surgeon 3) Electrician 4) X-ray technician 5) Physical therapist 6) Pediatrician 7) Cook 8) General pratitioner 9) Pharmacist 10) Housekeeper.

The ten pictures were numbered and displayed in the above order. The same instrument was used in the pre- and post-testings. Students responded on a three part answer sheet to each test question by circling the number of the picture that represented their answer.

The first exercise required the students to indicate whether or not each of the ten occupations represented on the picture cards was involved in the work force of a hospital. Students circled the numbers of the pictures that had hospital workers in them on their answer sheets.

The second exercise required the students to identify the correct picture card when given the title of the occupation. The students identified each picture by number when given the job titles in the following order: cook (picture 7), surgeon (2), pediatrician (6), housekeeper (10), nurse's aid (1), electrician (3), pharmacist (9), x-ray technician (4), physical therapist (5), general practitioner (8).

In the third exercise, the students were asked to identify which two occupations they would like to know more about. They indicated these two by picture number. The assumption in this exercise was that the learning activity would increase the subjects' abilities to identify pictures representing occupations about which they wanted information. The subjects' abilities to identify pictures showing occupations they had indicated a special interest in were then compared on the pre- and post-tests.

Data Analysis

Correct and incorrect responses were recorded for each of the three exercises on both the pre- and post-tests. Appropriate codings were then assigned to enable implementation of the Sign test. The .05 level of significance was selected for rejection of the hypothesis of no difference.(2)

Results

Part I

The data indicate that a significant number of the students increased their awareness of the kinds of workers that work in a hospital as a result of being exposed to the learning package on health careers.

Part II

The data indicate that a significant number of the students were able to identify the correct visual image of an occupation when presented with the verbal stimuli as a result of being exposed to the learning package.

Part III

The data indicate that there was a significant increase in the students' abilities to identify pictures showing their first choice of an occupation, but there was no significant increase in the students' abilities to identify pictures showing their second choice of an occupation.

Discussion

Part I

In general, the data supports the use of the learning package as a means of increasing career awareness about health careers on the second grade level. The results also seem to indicate that the teaching methods were effective in motivating the student to acquire the information therein.

Part II

The fact that the subjects could correctly identify the visual image of an occupation when presented with the verbal stimuli suggests that the students came to understand, in part, the job functions of these workers. Their occupational awareness was increased as a result of the learning package implementation.

These results, combined with the fact that a significant number of the students became more knowledgeable of the variety of occupations found in a hospital, seem to suggest that the students grasped the concept that these workers are highly interdependent (i.e. each worker depends on the specific job functions of other workers in the hospital). This becomes even more apparent when consideration is given to the fact that the students not only identified the visual images of occupations such as electrician, cook, and housekeeper, but also identified them as hospital workers.

The concept of worker interdependence is of significance because at a later time in a student's development, when he has been exposed to additional occupational areas, he may come to assume that: "Specialization creates interdependency."(3) An understanding of this concept is essential in perceiving the relationship of one's self to others in our working society.

Part III

It is difficult to determine why there was a significant improvement in the students' abilities to identify pictures of their first occupational choice and not their second. However, there are a number of possible explanations why this occurred. One possibility is that the students may have been more motivated to learn about their first occupational choice than their second. This would explain why there was a significant increase in ability to identify the first choice of an occupation on the post-test but no change with regard to the second choice.

The following circumstances may partially account for the marginal significance of the results for Part III. The student could have identified his choice correctly on both the pre- and post-tests, and at the same time, his initial awareness could have increased over and above the knowledge required to answer the test questions as a result of the activity. There would have been no way to measure this with the evaluative tool under these circumstances.

A closer look at the individual tabulations of the students' abilities to identify their first and second choices show that the majority of the students could identify their choices prior to unit implementation. This leads us to believe that the above situation is at least a possibility.

If the majority of students could identify their choices prior to unit implementation, the possibility exists that the majority of the students based their choices on their prior knowledge of those occupations.

This, in turn, supports the need for career awareness on the elementary level. If the very young student wants to know more about the occupations of which he already has knowledge, and he does not display similar curiousity for occupations of which he is not aware, his occupational choice may he hindered at a later time in his development by his limited knowledge of the total opportunities available. A great variety of occupational information and experiences should be offered. Awareness should be increased beyond the student's limited point of reference.

Holland says:

> Persons with more adequate choices will exhibit greater differentiation and organization of occupational knowledge than will persons of less adequate choices.(4)

We should also consider, however, that the testing instrument may not have been reliable since no attempt was made to assess this.

Summary

This study indicates that student awareness about health occupations was increased, and that the information was appropriate for the students involved, and that the learning activity package was an effective guide for the elementary teacher to use in developing career education activities.

References

1. "The National Standard Career Education Model-Kindergarten through Adult"; Educational Properties Incorporated; P.O. DX, CA, 92664; 1972.

2. Siegel, Sidney; Non-Parametric Statistics for the Behavioral Sciences; McGraw-Hill Book Co.; New York, New York; 1956.

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4. Holland, John L.; "A Theory of Occupational Choice"; Journal of Counseling Psychology; 6:1:40; Spring, 1959.

EVALUATIVE STUDY ON LEARNING PACKAGES FOR GRADES 1, 3, 4, 5, AND 6

Karen McMahon
Activities Writer
NOW Exemplary Program

A group of five elementary teachers from a cross-section of grade levels gathered to learn about some new evaluation techniques. The inservice training day was intended to expose these teachers to pre- and post-testing techniques as a means to evaluate units of instruction.

Each teacher chose a career education learning package, and after receiving instruction on evaluation, each made pre- and post-tests for the package. Behavioral objectives outlined in the packages were a basis for each test model.

The teachers' instruction on evaluation consisted of their actual participation in a mini-career education unit on corporate structure. A pre- and post-test was administered to determine the growth in the teachers' awareness concerning job functions and worker interrelationships in a corporate sturcture.

Dr. Robert Nannay and Dave Morrill from the University of Maine, Portland-Gorham, Industrial Arts Department conducted the activity. During the activity, teachers role-played jobs in a corporate structure by actually manufacturing a product. After being exposed to silk-screening techniques by Mr. Morrill, the teachers made greeting cards. Each had an opportunity to experience every step in the process. Afterwards, they took their post-test and compared the results with the pre-test.

During the day, teachers were not only exposed to a new kind of classroom activity, but they also learned something new about evaluation: evaluation can be a humanizing process that allows both the teacher and the student to determine growth as a result of instruction in a more specific and accurate manner.

Results

Grade 1

Maggie Pelletier, a first grade teacher, chose a unit called "Safety Awareness." The workers studied in this unit were community helpers. The students had already been exposed to this cluster of workers earlier in the school year. "Safety Awareness" emphasized the role of community helpers in helping the community and particularly the student. "What do I do in case of fire?", "What do I do if someone is hurt?", and "How and why does a policeman conduct traffic?" are questions students answered during role-playing activities. Students not only experienced what they should do in case of emergencies, but they also realized what community helpers can do.

The pre-test largely consisted of role-playing activities, too. The teacher asked: "Tell me or show me what you would do if an accident where someone got hurt happened."; "Tell me or show me what you would do in case of fire?" She recorded individual responses on both the pre and post-tests.

She then used community helper posters to determine the students' awareness concerning these workers and their role in the community before and after "Safety Awareness."

The students increased their awareness about emergency situations as a result of the unit implementation. Students would either discuss or do what they would do in an emergency with a greater degree of organization and clarity after participating in the unit's activities.

The test section on community helper awareness indicated that the students had already acheived an adequate level of awareness concerning these workers. The students had probably grown as a result of their previous exposure to community helpers.

Grade 3

Gerry Ricker, a third grade teacher, chose a unit called "Personal Services Occupations." This group of occupations includes such workers as: shoe-shine person, manicurist, cosmetician, beautician, host, hostess, waiter, waitress, chauffeur, butler, maid, cook, housekeeper, gardener, seamstress, tailor, cobbler, health salon operator, and laundromat operator.

Students became more aware of this group of workers and their work roles. Unit activities also enabled students to understand the dignity of this kind of work. The overall concept was to help the student understand the dignity of all kinds of work.

The teacher accomplished this goal by allowing the students to find satisfaction in helping each other with a personal service. Students brought in such items as shoe polish, brushes and rags; combs, brushes, hairpins, and rollers; cloth, needles, thread, and pins; serving trays, food dishes, and silverware. Students then participated in role-playing activities with classmates while using these articles.

Students also became more aware of these workers and their dignity by visiting a local laundromat. They asked the operator many questions about the responsibilities of running a laundromat. They also learned more about the tools and machines with which an operator has to be familiar.

Gerry Ricker's written pre- and post-test was developed to determine the growth in the students' awareness concerning this large group of workers. She asked students to draw pictures of five personal services workers with their tools and uniforms while performing a job function.

She also determined their growth in awareness concerning the ways that these workers can help other people. This was a multiple choice question, and the students circled the appropriate responses.

The students showed an increase in awareness on both parts when pre- and post-test results were compared.

Grade 4

Rachel Billings, a fourth grade teacher, implemented a unit on workers who help supply us with clean water. These included public service occupations and environmental control occupations. This was a rather difficult group of workers about which to find information. The local public works department provided much of the information needed to prepare unit material and the pre- and post-tests.

During the unit the students studied these workers and discovered the many ways that we use and can conserve water.

The pre- and post-test consisted of a set of ten picture cards. Some showed water workers and others did not. The students were asked to identify the pictures that they thought had water workers in them.

The students then identified the pictures when given the verbal stimuli of the job titles.

Both parts of the pre- and post-tests showed a significant increase in student awareness.

Grade 5

Sue Cyr, a fifth grade teacher, decided to do a unit on occupations that dealt with flowers and plants. She used her regular science unit on botany as a basis for the study. Since it was springtime during the unit implementation the students had plenty of opportunity to bring in their own flowers and plants.

Students discovered more about botanists, farmers, gardeners, greenhouse personnel, and flower arrangers in relationship to flowers and plants. The students did this by visiting a flower shop-greenhouse, by sharing their experiences with flowers and plants, and by being exposed to occupational information. Interested students reinforced this activity by actually arranging flowers.

The written pre- and post-tests determined the students' growth in awareness about jobs that have "something to do with flowers and plants." The tests also indicated the increase in awareness about job facts such as required education and training, job duties, tools and objects the workers use, and the ways that flowers and plants can be used.

All areas indicated a significant increase in awareness except that the students already seemed to have an adequate knowledge of the tools and objects that these workers commonly use.

Grade 6

Richard Campbell, a sixth grade teacher and a part-time short order cook, implemented a unit on the short order cook. Dick's insight into the profession allowed him to deal with some specific skills of the short order cook.

Students were not only exposed to the work role characteristics of this occupation, but they had some hands-on experiences by computing a cook's pay when given the wage per hour, and social security and income tax percentages. They also wrote menus and made orders for food for small and large groups of people. They computed the approximate costs of cooking and serving such meals by calling up a local wholesale food distributer and requesting the costs of the items needed to cook the meals. School skills like math and language arts became occupational skills in these activities

The pre- and post-test was written. Students responded to such questions as: 1. Check some of the skills and abilities needed to be a short order cook. 2. What are the hours of a short order cook? 3. How much money do you think a short order cook earns? 4. Why is the short order cook an important occupation? 5. What are three job duties of the short order cook? 5. What kind of training does a short order cook need? 6. What other occupations are there in a restaurant?

A pre- and post-test test comparison cannot be made, since the post-test results were incomplete at the time of this writing.

EVALUATION

A Teacher's Report on Unit Implementation: Workers Who Build Homes

Developed and Implemented by:
Geraldine Ricker
Grade 3 Teacher

In Cooperation with the NOW
Staff

This unit was introduced by having the class discuss homes. We used the following questions as a guide for the oral discussion: What is a home? Are they all alike? Why not? What makes homes different from one another? What is your home like? Do you know who builds homes? Does it involve a lot of workers? Who are some of these workers? What are some of the tools and materials used to build a home?

The students then drew pictures of their own homes. We displayed these on the bulletin board.

Next, with the textbook as a guide, the types of workers involved in building homes were discussed in more detail. Pictures of workers, filmstrips from the NOW Program, and library books helped make the children more aware of construction workers and their skills. These workers were studied: architect, contractor, carpenter, bricklayer, electrician, plumber, roofer, laborer, and foreman.

As we studied these workers, we made a classroom chart of them and added this to the bulletin board. Later on, we had a quiz on these workers and their skills.

The children then worked in small groups. Each chose workers they would like to pantomime. Then we had an art lesson to make the necessary costumes, uniforms, and tools for each worker. Students assumed the role of their worker, and we carried on a few days of "role playing" activities.

Our next discussion concerned tools and their value. We discussed the use of each tool and the training involved in trying to use the tool. We also discussed the workers who could use the tool. These were the tools studied: hammer, screw driver, saw, rule, level, square, trowel, and palate.

The children made a chart of these tools and put it on the bulletin board.

This activity was followed by a class discussion on building materials. We added a chart of these materials to the bulletin board: brick, lumber, paint, glass, shingles, concrete, pipe, wire, stone, and nails.

The children began, at this point, to work on individual or group projects. Some made posters of building materials. Some drew pictures of the workers and their tools. Some brought in blueprints of their homes, and the others drew original blueprints of their homes. The blueprint lesson carried over into a math lesson.

We were also fortunate that our school is across the street from a shopping mall which was under construction. One afternoon with the assistance of the student teacher, we went over to the construction site. Having cleared this with the foreman previously, we were allowed to watch and talk with some workers. We learned a great deal from this fine experience. We were able to watch much of the construction from our school as the year passed.

As a follow-up, the children wrote thank-you notes, and made oral and written reports about their experience.

Before we ended the unit, we also had a class discussion on homes around the world. We discussed how and why homes are different This led to a discussion on climate, location, and building materials and tools. To reinforce this social studies lesson, the students drew pictures of different kinds of homes around the world.

We, then, summarized what new things we had learned about homes and workers who build homes. We had a post-unit questionnaire on this information.

An Analysis of the Fifteen Career Clusters

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An Analysis of the Fifteen Career Clusters

I. Agri-Business and Natural Resources Occupations

A. Inspection and regulatory services

1. Food and drug inspector
2. Mineral inspector

B. Conservation

1. Soil conservationist
2. Biologist
3. Agronomist
4. Engineering aide

C. Education

1. County agricultural agent
2. Vocational agriculture teacher
3. Instructor, college of agriculture

D. Research

1. Agricultural economist
2. Agronomist
3. Biochemist
4. Engineer, agriculture

C. Forestry

1. Forester
2. Silviculturist
3. Dispatcher
4. Forest fire fighter
5. Sap collector
6. Log grader

D. Land and water management

1. Range conservationist
2. Surveyers
3. Agricultural engineer
4. Reservoir manager

E. Fisheries and wildlife

1. Fish and wildlife specialist
2. Game farmer
3. Fish hatchery man
4. Fish and game warden

F. Mining and quarrying

1. Machinery operators
2. Miner
3. Stone grader

I. Agri-Business and Natural Resources (cont.)

G. Petroleum and related products

1. Geologist
2. Driller
3. Pipe line foreman
4. Oil pumper

H. Productive agriculture

1. Poultryman
2. Dairyman
3. Orchardist
4. Nurseryman

I. Processing and marketing

1. Broker
2. Fruit grader
3. Drier, dehydrator
4. Auctioneer
5. Egg candler

J. Service

1. Chicken sexer
2. Artificial inseminator
3. Veterinarian
4. Farm equipment mechanic
5. Landscape architect

II. Business and Office Occupations

A. Accounting

1. Bookkeeper
2. Accountant

B. Computer

1. Key-punch operator
2. Sorting machine operator
3. Tape librarian

C. Secretarial science

1. Stenographer
2. Legal secretary
3. Medical secretary
4. Court reporter

D. Management

1. Executive
2. Public relations worker

II. Business and Office Occupations (cont.)

E. Personnel

1. Supervisor
2. Recruiter
3. Personnel counselor
4. Administrative officer

F. Finance-Insurance-Real Estate

1. Financial analyst (finance)
2. Bank teller (finance)
3. Insurance examiner
4. Insurance salesman
5. Real estate broker
6. Real estate posting clerk

G. Office (clerical)

1. General office clerk
2. Mail clerk
3. Messenger
4. Typist

III. Communications and Media Occupations

A. Journalism

1. Reporters
2. Copy and proof readers
3. Columnists and critics
4. Editors

B. Motion pictures

1. Producer
2. Writer
3. Artists
4. Camera man

C. Telephone and telegraph

1. Engineers
2. Radio communications translators
3. Managers and supervisors
4. Lineman

D. Recording industry

1. Musician
2. Mixing engineer
3. Dubbing and editing engineer
4. Lyricist

III. Communications and Media Occupations

E. Radio and television broadcasting

1. Production man
2. Announcer
3. Cameraman
4. Transmitter operator

IV. Construction Occupations

A. Wood construction

1. Carpenter
2. Timbering foreman
3. Band-saw operator
4. Asbestos shingle roofer

B. Metal construction

1. Pipe fitter
2. Boilermaker
3. Plumber
4. Sheet metal worker

C. Masonry construction

1. Brick layer
2. Marble setter
3. Terrazzo worker
4. Plasterer

D. Electrical construction

1. Electrician
2. Conduit man
3. Air-conditioning installer
4. Diesel plant operator

E. Finishing

1. Billboard erector
2. Carpetlayer
3. Cabinetmaker
4. Painter

F. Equipment operators

1. Bulldozer operator
2. Dredge operator
3. Crushed stone operator
4. Blaster

IV. Construction Occupations (cont.)

G. Engineering and support occupations

1. Architect
2. Civil engineer
3. Construction inspector
4. Surveyor

V. Consumer and Homemaking Education

A. Food specialists

1. Food and beverage analyst
2. Dietician
3. Consumer service specialist
4. Food processing technician

B. Housing and equipment specialists

1. Electric equipment tester
2. Home service director
3. Color expert
4. Home lighting advisor

C. Textiles and clothing specialists

1. Textile chemist
2. Buyer
3. Sewing instructor
4. Fashion designer

D. Family economics and home management

1. Researcher in home management and family economics
2. Director of consumer education
3. Budget consultant
4. Home management and family economics journalist

E. Family relations and child development

1. Nursery school teacher
2. Researcher in family relations and child development
3. Family and relations and child development journalist

F. Extension service

1. Specialist-in-charge
2. District extension service agent
3. County-home demonstration agent
4. 4-H Club agent

VI. Environmental Control Occupations

A. Pollution prevention and control

1. Water purification chemist
2. Sewage plant operator
3. Water tender
4. Radiation monitor

B. Disease prevention

1. Exterminator
2. Milk sampler
3. Plant pathologist
4. Sanitary inspector

C. Environmental planning

1. Camp-ground caretaker
2. Landscape architect
3. Urban planner
4. Construction engineer

D. Resource control

1. Animal ecologist (zoologist)
2. Fire look-out
3. Aquatic biologist
4. Forest aid
5. Range manager

VII. Fine Arts and Humanities Occupations

A. The visual arts

1. Advertising artist
2. Clothes designer
3. Motion picture artist
4. Product and package designers
5. Painting and sculpting
6. Photography

B. The performing arts

1. Dancer
2. Theater occupations
3. Musicians and related occupations

C. Occupations in writing

1. Literary writer
2. Playwright
3. Poet
4. Technical writer

VII. Fine Arts and Humanities Occupations (cont.)

D. Architecture

1. Architect
2. Urban planner
3. Marine architect
4. School plant consultant

E. Religion and theology

1. Clergymen
2. Director of religious activities
3. Minister of sacred music
4. Parish worker

F. Language and linguistics

1. Interpreter
2. Scientific linguist
3. Translator

G. History and museums

1. Biographer
2. Genealogist
3. Archivist
4. Museum related occupations

VIII. Health Occupations

A. Mental health and mental health services

1. Psychiatrist
2. Psychiatric nurse
3. Psychometrist
4. Social Psychologist

B. Medical and biological science services

1. X-ray technologist
2. Physician's assistant
3. Medical laboratory assistant
4. Blood bank technologist

C. Dentistry and dental science services

1. Dentist
2. Dental hygienist
3. Dental ceramist
4. Dental laboratory technician

VIII. Health Occupations (cont.)

D. General hospital and medical office related occupations

1. Central supply supervisor
2. Nursing aid
3. Receptionist
4. Diet clerk

E. Medical emergency services

1. Ambulance driver
2. First-aid attendant
3. Ambulance attendant

F. Administration of health services

1. Hospital administrator
2. Medical officer
3. Admitting office
4. Accountant

G. Personal and community health services

1. Public health educator
2. School nurse
3. Sanitarian
4. Home health aid

H. Pharmaceutical science and services

1. Pharmacist
2. Pharmacy helper

I. Professional medical supportive personnel

1. Research nutritionist
2. Health physicist
3. Audiologist
4. Chiropractor
5. Musical therapist

J. Medical professions

1. Medical doctor
2. Public health veterinarian
3. Licensed practical nurse
4. Nurse anethetist

IX. Hospitality and Recreation Occupations

A. Commercial and non-commercial travel bureaus

1. Information clerk
2. Lodging facilities attendant
3. Public relations man

IX. Hospitality and Recreation Occupations (cont.)

- B. Travel agencies
    1. Advertising and publicity personnel
    2. Information clerk
    3. Hotel representative
    4. Travel advisor
- C. Transportation
    1. Passenger agents and clerks
    2. Purser
    3. Stewardess
    4. Steward
    5. Tour conductor
- D. Public, industrial, and private recreation
    1. Athletic director
    2. Acrobat
    3. Mime
    4. Magician
    5. Snake charmer
    6. Swimming instructor
    7. Ski patrolman
    8. Horse trainer
    9. Public address announcer
    10. Hunting and fishing guide
- E. Recreation concerned with natural resources
    1. Information center personnel
    2. Lifeguard
    3. Tourist guide
    4. Zookeeper

X. Manufacturing Occupations

- A. Management
    1. President
    2. Vice-president
    3. Manager
    4. Accountant
- B. Scientists
    1. Analytical chemist
    2. Organic chemist
    3. Physicist

X. Manufacturing Occupations (cont.)

C. Engineers

1. Electrical engineer
2. Industrial engineer
3. Mechanical engineer
4. Aerospace engineer

D. Technicians

1. Mathematical technician
2. Metallurgist assistant
3. Quality technician
4. Electronics technician

E. Craftsmen

1. Master mechanic
2. Tool designer
3. Tool maker
4. Master tailor

F. Skilled workers

1. Lithographer
2. Machinist
3. Pattern maker
4. Tinter

G. Semi-skilled workers

1. Mineral-kiln operator, charging machine operator, anodizer
2. Animal and vegetable-cheese blender, candy roller, rice miller
3. Chemical and synthetic-plastic welder, acid extractor

H. Unskilled laborers

1. Mineral-laborer, caster, hopper man, abrasive grader
2. Animal and vegetable-batter-mixer, candy cutter, bindery worker
3. Chemical and synthetic-dry-house man , core extruder, ampoule sealer

XI. Marine Science Occupations

A. Research

1. Aquatic biologist
2. Hydrographer
3. Marine geophysicist
4. Marine meteorologist

B. Chemical and mineral extraction

1. Ocean mining
2. Chemical extraction

C. Off-shore drilling

D. Fishing

1. Clam dredge operator
2. Spear fisherman
3. Sponge gatherer
4. Fish cleaner
5. Shellfish-processing-machine-tender

E. Aquaculture

1. Hatchery man
2. Fish farmer
3. Shellfish grower
4. Frog farmer

F. Marine engineering and technology

1. Marine architect
2. Skin diver
3. Marine electronic specialist
4. Diver pumper

G. Surface and on-shore support

1. Motorboat mechanic
2. Dockmaster
3. Laboratory tester
4. Motorboat operator

XII. Marketing and Distribution Occupations

A. Marketing management

1. Retail store owner
2. Store manager
3. Advertising manager
4. Training supervisor

XII. Marketing and Distribution Occupations (cont.)

B. Marketing research and analysis

1. Market research analyst
2. Statistician
3. Investigator
4. Systems analyst

C. Purchasing

1. Buyer
2. Broker
3. Jobber
4. Importer

D. Sales promotion and training

1. Product designer
2. Sign writer or painter
3. Model
4. Shopper

E. Selling

1. Salesman
2. Solicitor
3. Auctioneer
4. Routeman

F. Physical distribution

1. Warehouseman
2. Packager
3. Marker
4. Cashier-checker

G. Related business services - people who make arrangements for financing merchandise and services, handle credit, and insurance coverage

XIII. Personal Services Occupations

A. Domestic service

1. Laundress
2. Cook
3. Butler
4. Baby sitter

B. Lodging and related service occupations

1. Boarding house manager
2. House mother
3. Baggage porter
4. Janitor

XIII. Personal Services Occupations (cont.)

C. Barbering, cosmetology, and related services

1. Barber
2. Manicurist
3. Masseurs
4. Embalmer
5. Cremator

D. Dry cleaning, laundry, and apparel services

1. Laundry foreman
2. Rug cleaner
3. Dry cleaner
4. Hand presser
5. Shoe repairman

E. Stewards, attendants, hosts, and miscellaneous personal services

1. Chaperon
2. Escort
3. Rest-room attendant
4. Chauffeur

F. Domestic animal care

1. Horseshoor
2. Dog groomer
3. Pet-shop attendant

G. Food and beverage preparation and service

1. Wine steward
2. Bar attendant
3. Baker
4. Cook
5. Waiter-waitress

XIV. Public Service Occupations

A. Administration and regulatory services

1. City managers
2. Engineers
3. Bank officers
4. Keepers of public records

B. Urban development

1. Urban planners
2. Environmental scientists
3. Physical scientists
4. Social scientists

XIV. Public Service Occupations (cont.)

C. Education

1. Public school teachers
2. Counselors
3. Librarians
4. School busing

D. Protective services

1. Law enforcement workers
2. Firefighters
3. Military

E. Post office workers

F. Public utility workers-water, sanitary, electricity, gas

G. Public health workers

H. Labor affairs- employment services, employment compensation

I. Public transportation workers

J. Social workers-rehabilitation, correction

1. Social workers
2. Child welfare workers
3. Rehabilitation counselors
4. Lawyers

K. Parks and recreation workersa

XV. Transportation Workers

A. Highway transport

1. Driver
2. Parking lot attendant
3. Meter reader
4. Truck foreman
5. Safety engineer

B. Rail transport

1. Locomotive engineer
2. Conductor
3. Towerman
4. Switch tender

XV. Transportation Occupations (cont.)

C. Airborne transport

1. Pilot
2. Maintenace and repair personnel
3. Weather clerk
4. Plotting board operator

D. Pipeline transport

1. Coal pipeline operator
2. Pumpman
3. Dispatching personnel
4. Main line station engineer

E. Water transport

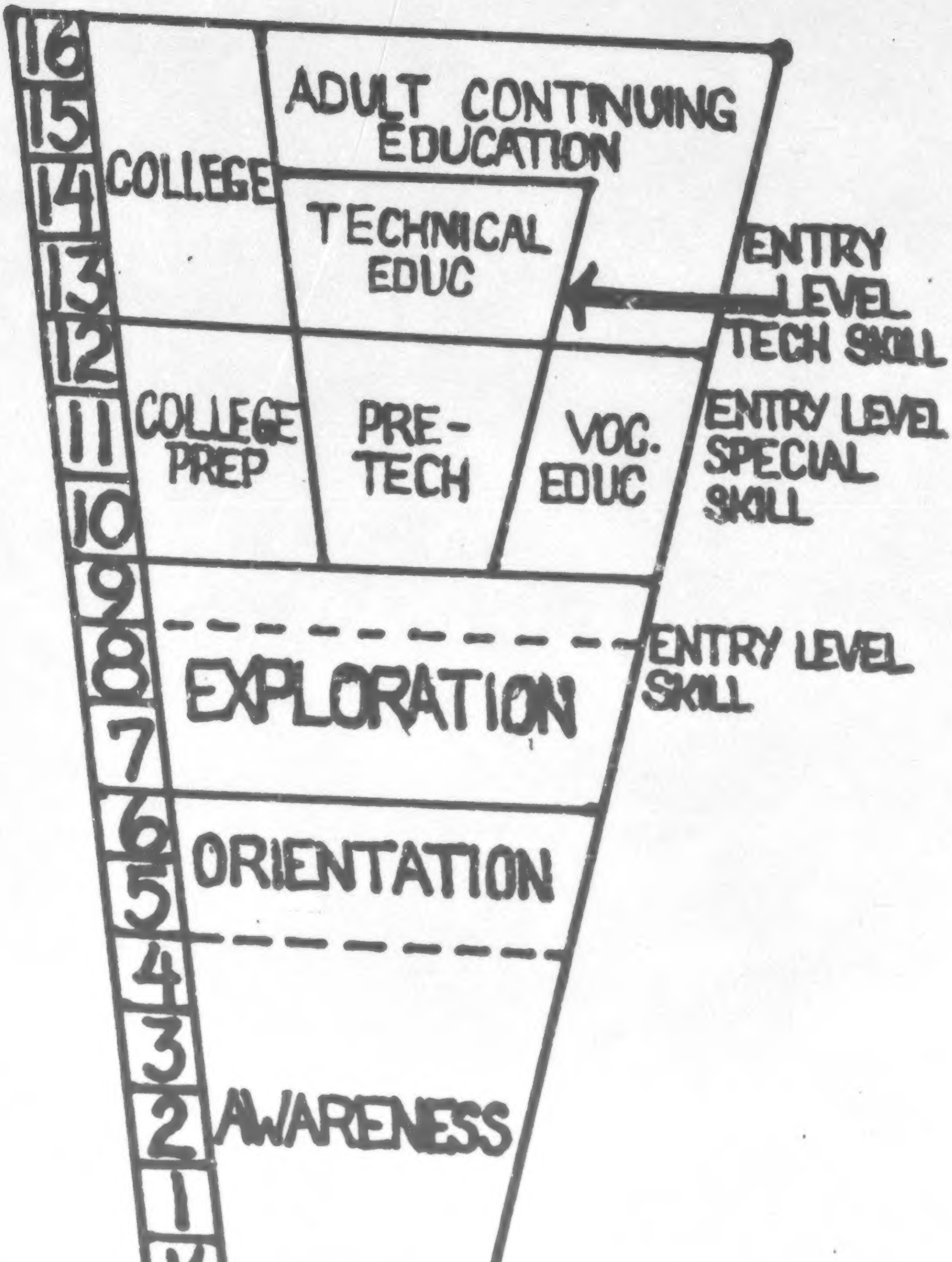
1. Captain
2. Engineer
3. Ship's crew
4. Freight handling personnel

NOTE: This analysis consists of exerpts from AN ANALYSIS OF FIFTEEN OCCUPATIONAL CLUSTERS IDENTIFIED BY THE U.S. OFFICE OF EDUCATION, prepared at Grayson County College, Sherman/Denison, Texas under a grant from the Texas Education Agency.

CAREERS AND SUBJECT MATTER TIE-INS

CAREER CLUSTERS	SUBJECT AREAS Life Sci.	Chemistry	Physics	Math	Higher Math	Literature	Communications	Social Sciences	Art	Music	Home Ec.	Business	Wood-Working	Drafting	Machinery	Electronics	Graphic Arts	Auto Mechanics
1. Business & Office Occ.	◣			◣	◣		■	◣				■			◣	◣		
2. Marketing & Distributio	◣			◣	◣		■	■	◣	◣	◣	■	◣	◣	◣	■	■	◣
3. Communications & Media	◣			◣		◣	■	■	■	■	◣	◣				■	■	
4. Construction Occ.	◣	■	■	■	■		◥	◣	■			◣	■	■	◣	◣	◣	◣
5. Manufacturing Occ.	◣	■	■	■	■		◣	◣	◣			◣	◣	◣	■	■	◣	◣
6. Transportation Occ.	◣	◣	◣	◣	◣		◣	◣	◣			◣		◣	■	◣	◣	■
7. Agri-Bus. & Nat. Res.	■	■	■	■	■		◣	■	◣		◣	◣		◣	◣	◣		◣
8. Marine Science Occ.	■	■	■	■	■		◣	◣				◣		◣	◣	◣		◣
9. Environmental Control	■	■	■	■	■		◣	■				◣	◣	◣	◣	◣		
10. Public Service Occ.	◣			◣			◣	■			◣	◣						
11. Health Occupations	■	■	■	■	■		◣	■			◣	◣		◣	◣	◣		
12. Hospitality & Rec. Occ	◣			◣			■	■	◣	◣	◣	◣						
13. Personal Services Occ.	◣			◣			◣	◣			◣	◣						
14. Fine Arts & Humanities	◣			◣		■	■	■	■								◣	
15. Consumer & Homemaking	■	◣	◣	◣			■	■			■	◣						

K-16 CAREER EDUCATION SCOPE AND SEQUENCE PARADIGM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COLLEGE
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TECHNICAL EDUC
ENTRY LEVEL TECH SKILL
COLLEGE PREP
PRE-TECH
VOC. EDUC
ENTRY LEVEL SPECIAL SKILL
EXPLORATION
ENTRY LEVEL SKILL
ORIENTATION
AWARENESS